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1956

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VK3WI: Sundays, 1130 hours EST, simultaneously on 3573 and 7146 Kc., 56.8 and 144.25 Mc. Intrastate working frequency 7135 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

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EDITORIAL

THE IMPORTANCE OF WE AND THE W.I.A.

The use of the personal pronoun "I" comes naturally to the selfish egotist, but never engenders the team spirit necessary for the progress of any organisation of the success of any project.

The W.I.A. is fortunate in having a preponderance of members who think in terms of WE. It is this selfless devotion to the cause of Amateur Radio and national need that has been responsible for the progress of the Institute and the high prestige its members enjoy in the community.

Where else could one find a body of people so diverse in political and sectarian outlook or educational

standard so closely wedded to their art, and so deeply concerned with the welfare of their fellowmen as the Amateur Fraternity?

The Remembrance Day Trophy perpetuates the memory of those unselfish Amateurs who gave their lives so that "WE" could continue to enjoy freedom.

Let us always remember the importance of WE—the members of the oldest Amateur body in the world—OUR W.I.A.—and eschew forever the selfish "I" which is characteristic of the Dictator and out of place in OUR democratic world.

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The G4ZU Three-Band Minibeam

Details of a Compact New Array for 14, 21 and 28 Mc.

BY G. A. BIRD, G4ZU

THE G4ZU Three-Band Minibeam described in this article was designed with the object of providing a high gain directional aerial for 14, 21 and 28 Mc. A single feed line to the transmitter is used and no adjustment is required when changing bands. The performance on each band is equal in every way to that of a comparable single-band array.

In designing the Minibeam particular attention was directed to keeping the weight and physical size as small as possible to permit its use even in a very small back garden. The longest element is 24 ft. and the total weight of the beam in use at G4ZU is only 10 lb. It is therefore possible to use a cheap and simple supporting structure such as a 30 ft. scaffold pole.

The beam consists of three basic elements—a driven element, a director and a reflector. The elements are split at the centre so that on 28 Mc. the array becomes a five element beam. On 21 Mc. it operates as a three element array with an extended driven element giving somewhat greater gain than a conventional three element beam, and on 14 Mc. as a two element array with shortened elements, thus achieving a worthwhile reduction in size and weight.

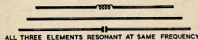


Fig. 1.—Three methods of resonating beam elements to the same frequency.

The aerial is normally fed with 300 to 450 ohm balanced line, but a matching unit has been designed for converting to 75 ohm co-axial feed where this is preferred. The three-band matching unit is automatic in operation and does not require re-tuning when changing from band to band as would be necessary when using a normal type of aerial tuning unit. In practical operation the station transmitter or receiver can be switched to any of the three bands covered by the system with the assurance that a high gain directional aerial with a good front-to-back ratio will be instantly available. The advantages this offers for contest work cannot be overestimated. Provision has been made in the matching unit for operating the aerial and feeder as a top loaded vertical on 3.5 Mc. when operation is required on this band.

DESIGN OF THE ELEMENTS

The method employed for obtaining three-band resonance is rather unusual and merits some detailed description. It is fundamentally a system of inductive loading with electronic switching by means of quarter-wave stubs. To illustrate the principles involved it is necessary to consider first of all the

The design of the aerial system described here has been protected by a British Patent Application (No. 33589/55) but this does not prevent individual Amateurs employing the system for their personal use. Sole rights to manufacture and sell aerials of this pattern have been granted to the Panda Radio Co. Ltd., to whom thanks are recorded for permission to publish this article.

design of the director. There are two ways of altering the resonant frequency of a parasitic element. One is to change its physical length, the other, less commonly employed but equally effective, is to insert inductance or capacity at the centre of the element (Fig. 1). Inductance will lower the resonant frequency. Capacity will make the resonant frequency higher.

In this particular application the director (Fig. 2) is 16 ft. long and is loaded with inductance at the centre to permit operation as a director on the 21 Mc. band. If this inductance were shorted out by some form of switch or relay we should be left with a plain element 16 ft. long, correct for operation on 28 Mc.

To obviate the need for mechanical switching advantage is taken of the rather unusual properties of a quarter-wave stub. If a piece of twin feeder is cut to be a quarter-wave resonant length at 29 Mc. and one end is left open, the other end will appear like an electrical short circuit at this frequency. At 21 Mc., however, it will no longer behave like a short circuit but will behave electrically like a small capacity. If this stub is connected across the 21 Mc. loading coil it will perform the switching function automatically. On 28 Mc. the loading inductor will be shortened out by the stub. On 21 Mc. the stub will merely appear like a small capacity across the loading coil. The condition for automatic two-band resonance has thus been satisfied as far as the director is concerned.

A somewhat similar approach is used for the reflector, the physical length of which is 23 ft. (Fig. 3). It is loaded with inductance for operation on 14 Mc., a quarter-wave stub automatically shorting out the inductor for 21 Mc. operation. The reflector also performs a useful function on 28 Mc. On this band

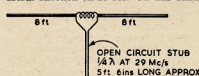


Fig. 2.—A two-band director for 21 and 28 Mc.

its behaviour is similar to that of two half-wave reflectors in phase. Due to the relatively wide spacing the tuning is quite broad and no critical adjustments are necessary. The reflector is spaced 7 ft. from the driven element and 12 ft. from the director.



Fig. 3.—Three-band reflector for 14, 21 and 28 Mc.

Coming now to the driven element, it would have been quite possible to employ stubs and inductors in a similar manner to the parasitic elements, but it was felt that this would unnecessarily complicate the system. As will be seen later, the design finally decided upon provides several incidental advantages. It should perhaps be explained at this stage that although half-wave driven elements are normally employed in parasitic arrays, this is by no means essential and in certain cases there may be definite advantages from the point of view of gain and radiation resistance in using a length other than a half-wave. The length finally decided upon, 24 ft., was selected with three objects in view—

- (1) To permit operation as a five element beam on 28 Mc., the driven element being effectively two half-waves in phase on this band.
- (2) To improve the band width and radiation resistance on 21 Mc.
- (3) To minimise reactance changes when switching from band to band.

The residual reactance changes are usefully employed in resonating the automatic matching unit described later.

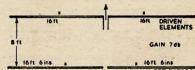


Fig. 4.—Four element beam for 28 Mc.

The design of the aerial as far as 28 Mc. is concerned was influenced to some extent by an article in the April, 1955, issue of "QST." In this article, W6AJF showed that a four element beam (Fig. 4)—could be replaced by a three element array using a shortened driven element and a single director (Fig. 5). He claimed that this arrangement gave a higher front-to-back ratio and resulted in no loss of gain, although the saving in size and weight was considerable (forward gain 7 db.).

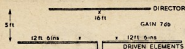


Fig. 5.—Three element array using a shortened driven element and a single director.

In the Minibeam an arrangement of this nature has been backed up by a reflector giving a further 2.4 db. gain (Fig. 6). The beam on 28 Mc. is effectively a five element array and gives more gain and greater bandwidth than could be obtained with five elements in line. The bandwidth is probably sufficient to cover the American 27 Mc. band so that in the United States the array could be correctly described as a four-band beam.

FEEDING THE MINIBEAM

The matching unit is located at the lower end of the feeder. This means that all matching adjustments can be made at ground level with the beam in its final working position. This overcomes the difficulty commonly experienced with parasitic beams of a change in feed impedance as the aerial is raised to its final working height with a consequent increase in standing wave ratio. This can often entail serious loss with co-axial type feeder.

The feeder recommended for use with the Minibeam is 300 to 450 ohm open wire line. This value was selected because it gives the lowest average standing wave ratio over the three bands covered. Losses due to standing waves are extremely small with this type of feeder. It is not always appreciated how much power is lost with the normal type of co-axial cable. With low impedance feeder and a T- or Gamma-match, it is often found, due to changes of reactance, that the standing wave ratio may rise to 3.5:1 or more at the band edges even when the s.w.r. at the band centre has been reduced to a satisfactory figure. The writer is convinced that in many Amateur aeriels much of the power is lost before it ever reaches the radiator. With open wire feeder, however, reactive components can be largely ignored and may even be put to some useful purpose. This is what led to the idea of a matching unit which could resonate automatically on each band.

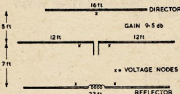


Fig. 6.—The Minibeam for 14, 21 and 28 Mc.

The impedance, as seen at the bottom of the feeder on 21 Mc., is arranged to be largely resistive. A series tuned circuit approximately resonant at 21 Mc. is connected across the end of the feeder. If the driven element and feeder length are suitably chosen an inductive component will appear at the lower end of the feeder on 14 Mc. Providing the L/C ratio is correctly chosen this inductive component appearing in series with the tuned circuit will automati-

cally de-tune it to a lower frequency, i.e., 14 Mc.

On 28 Mc. an opposite effect occurs. On this band a capacitive reactance appears at the bottom of the feeder automatically shifting the tuned circuit to a higher frequency, i.e. 28 Mc. It will be apparent that if the series tuned circuit is coupled to the transmitter with a co-axial link, it is possible to have an aerial tuning unit which will resonate automatically on three bands without adjustment. To make up any random variations that may occur in practice a trimmer condenser can be provided on the tuning unit, but with the model constructed by the writer, this condenser, once set, requires no further adjustment when changing from band to band.

With a two-turn coupling link correct transmitter loading was obtained on 21 and 28 Mc., but on 14 Mc. coupling was found to be slightly less than optimum. To correct this, the reactance of the link at 14 Mc. was tuned out by a series condenser of approximately 120 pF. This provided tighter coupling on this band without affecting the other two bands to any marked extent.

The automatic matching unit (Fig. 7) is not, of course, an essential part of the beam. The 450 ohm balanced line can, if desired, be connected directly to any aerial tuning unit of normal pattern. With an ordinary parallel tuned circuit it is probable that all three bands could be covered with a single coil providing the tuning condenser has a sufficiently large maximum capacity.

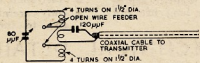


Fig. 7.—The Minibeam automatic aerial matching unit.

For correct operation with the automatic matching unit the feeder should be cut to a length of between 38 and 40 ft. If a normal type of aerial tuning unit is used, the system can be operated with almost any length of feeder, but in order to maintain a resistive termination on all three bands, a feeder about 56 ft. long is recommended.

If the two feeder legs are strapped together the aerial will operate quite efficiently as a top loaded vertical on 3.5 Mc. A switch is provided on the Minibeam matching unit for selecting this condition when 3.5 Mc. operation is desired.

The circulating currents in the matching unit are relatively low, with the result that power loss is negligible, and quite small coils can be used without fear of over heating. The circuit tunes most sharply on 14 Mc., and once it has been resonated on this band by means of the trimmer condenser the bandwidth on 21 and 28 Mc. will generally be found adequate to accommodate these two bands without further adjustment.

COMPARISON WITH FULL-SIZED ARRAYS

On 21 Mc. the array is a normal three element Yagi except that the radiation resistance and gain are somewhat higher

than normal due to the extended driven element. On 14 Mc. the gain is about 1 db. less than a full-sized beam due to the use of shortened elements. It was decided not to make the director resonant on this band as it would have resulted in too great a loss of bandwidth and radiation resistance. It does, however, help to improve the front-to-back ratio and lower the angle of radiation by a small amount. A number of checks against full-sized three element beams on 14 Mc. have resulted in surprisingly favourable comparisons on the score of signal strength.

The writer would like to express his appreciation of the help given by Mr. A. Woolvern (G3HLS) and many other Amateurs in checking the performance of the system on 14 Mc. Matched against the three element wide-spaced beam at G3HLS, which weighs about 700 lb., it was found that the Minibeam could put a signal into Australia, New Zealand and the United States which was in most cases of identical strength and rarely more than one "S" point down.

On 21 Mc. numerous checks were conducted with the help of G2CDI, G5SD, G3GKF, G2CCD and G3HCU, to mention only a few of the many willing helpers. The array seems to be capable of holding its own with all comers on this band and the same applies to 28 Mc. During poor conditions on the latter band the signal from the Minibeam is often reported as the only one getting through the noise in Australia and New Zealand. With 28 Mc. wide open, the large number of replies to a CQ call can sometimes become rather embarrassing.

On the score of front-to-back ratio, measurements made on site were checked against on-the-air reports. G2MI at a distance of about five miles provided the following reports:-

Band-	Front of Beam	Back of Beam
14 Mc.	S9 + 60 db.	S3
21 Mc.	S9 + 60 db.	S6
28 Mc.	S9	S3+

† Listening on 21 Mc. aerial.

Checking simultaneously with G2CDI, 60 miles to the west, and G5SD, 10 miles to the east, provided these results:-

Band	Station	Front of Beam	Back of Beam
21 Mc.	G2CDI	S9 + 40 db.	S4
	G5SD	S9 + 10 db.	S3
28 Mc.	G2CDI	S9 + 20 db.	S3
	G5SD	S9 + 10 db.	S4

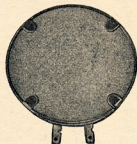
The front-to-back ratios obtained in this way are noticeably greater than measurements made on side, but serve to indicate that the discrimination is more than adequate for all normal purposes.

The principle of stub switching can, of course, be applied to other types of array and the writer is experimenting at the moment with a compact two-band beam, a two-band ground plane, and a three-band beam where loading coils can be eliminated. It is felt, however, that the arrangement described herein is likely to be generally most attractive, and it is hoped that many Amateurs who have so far been deterred from erecting a beam, due to lack of space, may be encouraged to try the system. Its use should enable them to compete successfully on the crowded DX bands of today.

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- Only carefully selected cements used throughout, to suit Australian climatic conditions.

TECHNICAL DETAILS

Rochelle salt crystal microphones are perhaps the most widely used for all types of service where quality speech and music reproduction at high output levels is a requirement. They are dependable in performance and when fitted with the appropriate "Zephyrifil" filter, their frequency response may be adjusted to suit any application or requirement.

This crystal microphone requires to be terminated with a high value parallel load of the order of 1 to 5 megohms for best results.

The mass of the moving parts is small, hence the sensitivity is high and a high efficiency is achieved.

Light gauge solder lugs are provided so that excessive heat in soldering will not be transmitted to the crystal element.

When mounted in a microphone cage, it is recommended that the insert be suspended in rubber, to eliminate shock and vibration.

One of the connecting lugs is directly connected to the case and care should be taken to solder the metal shield of the microphone cable to this solder lug, keeping the unscreened portion of the centre conductor as short as possible to eliminate hum pick-up.

All crystal elements are mounted on high grade suspension pillars, being fixed thereto with a good quality cement, thus ensuring stability and long life.

Case 1½" diameter (rear), 3" thickness, 1-13/16" overall diameter (front) with filter fitted.

Frequency Response = 60-6,500 c.p.s.
Output Level = -45 db (0 db = 1 volt/dyne/cm²)
Impedance = Model 1XA Grid 1 — 5 megohms.



Approximate Frequency Response Curve

AVAILABLE FROM ALL LEADING TRADE HOUSES

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Phone: BL 1300

PULSE THEORY

PART ONE

BY I. F. BERWICK,* VK3ALZ

A PULSE is any non-sinusoidal waveform. It can be shown that if an infinite series of sine waves is added, the resultant of this superimposition is a square pulse. See Fig. 1a. If only the higher harmonics are present the resultant is a peaked wave. (Fig. 1b). If only the lower harmonics are present, the resultant is more curvilinear and is said to be sinusoidal (Fig. 1c).

DEFINITIONS

Pulse Repetition Frequency (P.R.F.) is the number of pulses per second.

Pulse Duration (P.D.) is the time interval between the commencement of pulse rise and the end of pulse decay.

Pulse Recurrence Interval (P.R.I.) is the time interval between commencement of rise of the preceding pulse and commencement of rise of the following pulse. (See Fig. 1d).

These last two quantities are measured in micro-seconds.

Relationships:

$$P.R.I. = \frac{1}{P.R.F.}$$

$$\text{therefore } P.R.F. = \frac{1}{P.R.I.}$$

Power Measurement for Pulse Peak Power = $E I$, where E is the average voltage during the pulse, and I is the average current during the pulse (see Fig. 1e).

Average Power. Peak power averaged over the pulse recurrence interval (Fig. 1f).

$$\frac{\text{Average Power}}{\text{Peak Power}} = \frac{\text{Pulse Duration}}{\text{Pulse R.I.}}$$

$$\text{Duty Cycle} = \frac{\text{Average Power}}{\text{Peak Power}} \quad \text{by definition,}$$

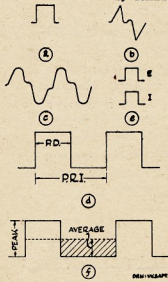


Fig. 1.

During the last war pulse application received considerable impetus, mainly due to radar and allied techniques. Now that we have been granted experimental television licences, knowledge of pulse theory and its applications will be of use to the Amateur.

In addition, high fidelity amplifier enthusiasts know that square wave testing of audio amplifiers is considered a very accurate check on performance and this should interest them, too.

hence

$$\begin{aligned} \text{Duty Cycle} &= \frac{P.D.}{P.R.I.} \\ &= P.D. \times P.R.F. \end{aligned}$$

EFFECT OF AN R/C NETWORK ON THE SQUARE PULSE

It is well known that if a sine wave is passed through an R/C or an L/R network, the pattern remains unchanged—if we put a sine wave in, we get a sine wave out.

The condenser, or inductor, whichever it may be, follows the a.c. swing of the voltage, due to the regular rate of change of the voltage, and the comparatively long time interval for each cycle of the oscillation.

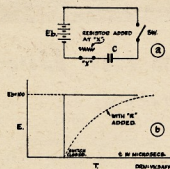


Fig. 2.

However, if a square pulse is applied to such a network the output is not usually a square pulse. The reason is that the rate of change of voltage at the beginning and end of the square pulse is very great (theoretically, it is infinite) and the C/R or L/R network having a finite time constant cannot follow the voltage rise and fall.

Refer first to Fig. 2a. This circuit shows a battery in series with a condenser and a switch. Let E_b = battery voltage = 100 volts. If we close the switch, the condenser charges instantaneously to 100v.; the potential-time graph (Fig. 2b) illustrates this fact.

Refer now to Fig. 2a. A resistor is now added to the circuit. When the switch is closed, the current is limited

initially by the value of the resistance in circuit. Thus condenser charging is not instantaneous.

The graph (Fig. 2b) of E against T is therefore an exponential curve or is said to have first order curvature. This exponential curve has the property that no matter how great we make T , E will always be able to rise to a slightly higher value if a further time interval is taken. That is, the condenser never fully charges to E_b (= 100 volts) no matter how long we wait.

In practice therefore the condenser is said to be fully charged after time $T = 5 CR$ microseconds.

In Fig. 3a we have in circuit a fully charged condenser and a switch which initially is open. On closing the switch the condenser discharges instantaneously. Fig. 3b shows the graph of E against T , the dotted line shows the same circuit with the addition of resistance R .

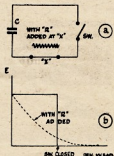


Fig. 3.

On closing the switch the rate of condenser discharge is again an exponential curve, but of negative gradient (or slope) and from this we see that E never falls to zero no matter how long we wait, i.e. the condenser is never completely discharged. However, in practice again we say that the condenser is discharged after time = $5 CR$ microseconds.

We are now able to see what will happen when a square pulse is applied to a C/R network. Fig. 4a shows a circuit of large C/R, i.e. of long time constant, to which a square pulse is applied.

Figs. 4b, 4c, and 4d show the graphs of E_b (applied voltage), E_c (condenser voltage), E_r (resistor voltage) against time.

Consider E_c first. Initially E_c is zero—as the pulse begins the condenser starts to charge, therefore E_c rises exponentially. Due to the long time constant, E_c only rises to a small percentage of E_b before the pulse ends. We take a figure of 10v.

When the pulse ends, C discharges exponentially through R , again with a long time constant. Hence the curve for E_c comprises two separate exponential curves—one with positive gradient leading and one with negative gradient following.

(Continued on Page 7)

* Lot 35, Loongana Avenue, Glenroy.



Danger in the Deep . . .

"Send SOS; it's the new call and it may be your last chance to send it!"

The suggestion was made in the wireless room of a ship everyone believed was unsinkable.

A radio officer looked up and laughed.

The time was 12.45 a.m., the date, April 15, 1912, and the sinking "Titanic" sent out the first SOS in history.

Today, a danger as disastrous to shipping as an iceberg is — ***rust.***

Rust is costing Australia more than £3 every second of the day.

Oil coatings* have now been devised which protect metals from corrosion. Manufactured by SHELL, they vary from thin, oily films suitable for short periods, to thicker, grease-like films for longer protection.

With such coatings Shell is helping Australia to remove the £100 million rust-stain from the balance sheet of the nation.

**Shell Ensis Oils.*



BY A. K. HEAD,* VK3AKZ

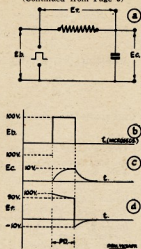


Fig. 4.

Next consider E_r . Initially E_r is zero—but as soon as the pulse arrives E_r immediately rises to E_b as the condenser has not had time to charge at all. As E_c rises due to charging up of C , E_r falls in an exponential manner until the pulse ends. At this stage $E_r = E_b - E_c = 100 - 10 = 90$ volts. However, as soon as E_b falls to zero, E_r also drops by 100 volts and is now -10 v. Thus E_r starts to rise exponentially towards zero volts as E_c falls exponentially to zero volts.

It should be borne in mind at this stage that the foregoing deals with a C/R network of long time constant, and the voltage patterns obtained apply only to this type of network.

NETWORK WITH SMALL C/R

In Fig. 5c and 5d we see the graph of E_c and E_r respectively.

Let us consider E_c first. As the pulse starts C charges exponentially towards E_b , however as C/R is small, this occurs quite quickly and for the rest of the pulse duration $E_c = E_b$. Now the pulse ends and E_c discharges exponentially to zero.

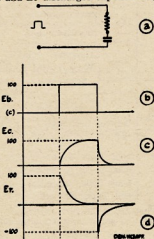


Fig. 5.

THIS is the oft told tale of how a new r.f. tube can rejuvenate an old receiver. The receiver in question is a Marconi CR-100, a classical communications receiver covering 60 Kc. to 30 Mc. in six bands, two r.f. stages, 455 Kc. i.f., crystal filter, variable selectivity and so on. A pleasant receiver to use, but the noise generated by those 6K7 r.f. tubes on 21 and 28 Mc. was overpowering. When 10 metres was open it was possible to hear exactly three stations, all locals who would be S9 on a crystal set.

Of course the remedy was obvious, a change to low noise r.f. tubes. This meant miniature sockets, which meant taking hammer and chisel to the octal sockets. But on a number of occasions, when about to strike the first blow, the upraised hand was frozen at the thought of the new high gain tube bursting into oscillation, which would probably only be controlled by a complete re-wiring of the r.f. end.

This was sufficient excuse to defer any action for many moons. Finally, I came back to the old idea of having a trial run by using an adaptor consisting of a miniature socket mounted on an octal base. I had been rather cold on this idea at the thought of leads criss-crossing inside the adaptor in order to get the right connections. However, when I got round to examining the connections, it was a pleasant surprise. Apparently the person who decided on what pins should be what in the miniature tubes, was also thinking about adaptors. Take a look at the following table where the octal list is for 6K7, 6B7, 6U7, etc., and the miniature for 6BA6, 6AU6, 6AK5, 6AG5, etc. (but beware the Z77).

If the octal socket has heater pin 2 active and pin 7 earth, then the table

* 3 Annadale Street, Kew, Vic.

zero, quite quickly due to small C/R, the E_c curve is more regular in shape than is the case for a large C/R.

Now consider E_r . As the pulse starts E_r rises instantly to E_b and then falls exponentially quite quickly to zero as soon as the condenser charges up; for the rest of the pulse duration E_r is zero. When the pulse ends the E_r falls by 100v. ($= E_b$) and is now -100 v. Once again therefore E_r charges up with a short time constant to zero volts.

As can be seen from the graph (Fig. 5d) E_r is a peaked wave and bears no resemblance whatever to the square pulse, this means that circuits with short time constants play havoc with square pulses and in practical circuits for pulse amplifiers must be avoided if a reasonable pulse shape is to be retained.

The pulse developed across a condenser is known as an integrated wave, while the pulse developed across a resistor is known as a differentiated wave.

If the integrated and differentiated waves are added graphically, the resultant obtained is the input pulse (adding Figs. 5c and 5d would give us Fig. 5b).

Octal	Miniature
1 Shield	3 Heater
2 Heater	4 Heater
3 Plate	5 Plate
4 Screen	6 Screen
5 Suppressor	7 Suppressor or Cathode
6 Blank	Blank
7 Heater	1 Grid
8 Cathode	2 Cathode or Suppressor

shows that all connections in the adaptor are direct. The connection to the grid of the miniature socket depends on whether the grid lead is wanted above or below the chassis. If below, then pin 6 of the octal socket is available. In my case, it was more convenient above, so a grid cap was soldered to a stiff wire which poked up from the adaptor.

The only traps in making an adaptor appear to be to forget to earth the central sprig and shield of the miniature socket or to break up a tube to get an octal base and then find it hasn't got all the pins needed (in particular, pin 6 is often missing).

The next question was what tube to use? Good reading on this is the article by W05YF in May '55 "A.R." its sequel in June '55 "QST" and the correspondence in the same "QST." Of the tubes on hand a 6AG5 seemed the most suitable so it was tried as the first r.f. tube. With a certain amount of morbid satisfaction it was found to take off when the receiver was tuned to 21 Mc. In fact it was almost a disappointment to find that all that was needed was better screen and cathode by-passes. The original ones were 0.1 μ f. paper condensers about 2 inches away from the socket, and when 0.001 μ f. micas were added right at the socket it became perfectly stable. And it was now a different receiver. The bands suddenly became populated, the antenna trimmer could be peaked on noise and there was an increase in noise when the antenna was connected.

Next was the question whether a.v.c. and/or manual gain control should be applied to the 6AG5. It was decided to use neither, but let it run flat out at all times, for being a sharp cut off tube it does not take kindly to any form of gain control. The second r.f. tube has been left as a 6K7 as there is no advantage in using another low noise tube here and its good a.v.c. action is needed to protect the mixer on strong signals. Very strong signals can be handled by detuning the antenna trimmer and no snags in running the 6AG5 flat out have yet come to light.

Since everything appears to be satisfactory, I suppose I should take hammer and chisel and install the 6AG5 permanently. What did I say, everything working satisfactorily? Then why not just let it be? Ho-hum!

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VR65 ... 5/-	5BP1 ... 27/6
VR105 ... 15/-	VCR87 14/11
VR150/30 ... 15/-	EF50 ... 3/6
EF50 Sockets ... 3/6	
5BP1 Sockets ... 7/6	

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Wireless Sets 38 Mk. II.

Ideal person-to-person communication set. Working range approx. 2 miles set to set on a vertical rod aerial, or 10 miles approx. working from a good receiver and high-powered transmitter. It contains 5 valves: 1—ATP4, 4—ARP12. Operates from 3v. and 120v. batteries. Complete with microphone, headset and 4 ft. aerial section.

Price (less batteries)—
£9/10/- each.

Packing and delivery to railhead, 7/6 extra.

TANK WHIP AERIALS

English Slotted Type.
Two section (8 ft.).
15/- per set.

METERS, all types
from 2/6 each

FREQUENCY & FIELD STRENGTH METERS

155-235 Mc. Price £215.

TEST OSCILLATOR

150-226 Mc. Price £210.

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Price: 29/6. Packing and postage 5/-, Interstate 7/6.

Co-ax Cable, 72 ohms, 2/6 per yard.

Co-ax Connectors and Plugs, all types, from 2/6 a pair.

ALUMINIUM CHASSIS

Ex-American I.F.F.

Price: 5/-
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We can now offer Genemotors to operate from both 6 volt and 12 volt batteries, with an output of 250 volts, 90 Ma. Incorporated in these Genemotors is a Blower, which can be used also for Air Conditioning.

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BERNARD'S BOOKS

Serial numbers and prices:

56, Radio Aerial Handbook. 57, Ultra Shortwave Handbook. 64, Sound Equipment Manual. 69, Radio Inductance Manual. 72, Radio Experimental Circuits. 83, Radio Instruments and their Construction—all 3/9 each.

85, Miniature Radio Equipment and its Construction, 5/3. 99, One-Valve Receivers, 2/3. Two-Valve Receivers, 2/3. Practical Coil Construction, 4/6.

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Among other useful articles for a variety of purposes:

Micro Switches, 5/6 and 6/6. Ring Magnets ... 1/6.
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Here's a fine opportunity!

We offer **International Radio Tube Encyclopaedia**. This is a very important contribution to literature on **Electronic Engineering**. It contains some unique features: 15,000 tubes of all types used by the Armed Services of the Commonwealth, U.S.A. and Europe are completely described, in addition to the CV and normal civilian patterns.

Full instructions and extensive data in **fifteen languages**: English, French, Italian, Spanish, Dutch, Portuguese, German, Swedish, Norwegian, Danish, Russian, Polish, Czech, Hebrew, and Turkish.

Price: Only £3/3/-.

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BLOCK CONDENSERS

1—1 uF. 600 v. working, 2/6
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JONES PLUGS AND SOCKETS

21-pin with cover.

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12 volt and 24 volt.

Price: £5/10/-.

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Price: 2/6

RELAYS

Among our Relays the following should have special appeal:

3000 Type, 40,000 ohms 35/-
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60 ohms, with 4 makes 10/6
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VK-ZL DX CONTEST, 1956

N.Z.A.R.T. and W.I.A., the National Amateur organisations in New Zealand and Australia, invite world-wide participation in this year's VK-ZL DX Contest.

Objects: For the world to contact VK and ZL stations and vice versa.

When? Phone: 24 hours from 1000 G.M.T. Saturday, 6th October, to 1000 G.M.T. Sunday, 7th October.

C.W.: 24 hours from 1000 G.M.T. Saturday, 13th October, to 1000 G.M.T. Sunday, 14th October.

Duration for all contestants is 24 hours.

RULES

1. There shall be three main sections to the Contest—

- (a) Transmitting C.W.
- (b) Transmitting Phone.
- (c) Receiving—Phone and C.W.

2. The Contest is open to all licensed Amateur transmitting stations in any part of the world. No prior entry need be made. Mobile Marine or other non-land based stations are not permitted to enter the Contest.

3. All Amateur frequency bands may be used, but no cross band operating is permitted.

4. C.W. will be used for the second week-end and phone for the first week-end. Stations entering for both phone and c.w. sections must submit entirely separate logs for each.

5. Only one contact per band is permitted with any one station for Contest purposes.

6. Only one licensed Amateur is permitted to operate any one station under the owner's call sign. Should two or more operate any particular station, each will be considered a competitor, and must submit a separate log under his own call sign.

7. **Cyphers:** Before points may be claimed for a contact, serial numbers must be exchanged and acknowledged. The serial number of five or six figures will be made up of the RS (telephony) or RST (c.w.) reports plus three figures which may begin with any number between 001 and 100 for the first contact, and which will increase in value by one for each successive contact, e.g. if the number chosen for the first contact is 053, then for the second contact the number must be 054, for the third 055, and so on. If any contestant reaches 999, he will start again with 001.

8. **Scoring:** For VK and ZL Stations **ONLY**—15 points will be scored for the first contact on a specific band with any overseas country, 14 points will be scored for the second contact on the same band with the same country, 13 points for the third, and so on to the fifteenth contact which will score 1 point. All contacts with that particular country on that band will thereafter count 1 point each. This scoring procedure will be repeated on each band to encourage multiband operation. There will be no VK-ZL contacts between each other. Official A.R.R.L. countries list will be used.

Note.—Points will not be entered in the log for each contact; totals for each

country will be shown in the summary. Each call area in the U.S.A. will be a "Country" for scoring purposes.

For OVERSEAS STATIONS only. One point will be scored for each contact on a specific band with any VK-ZL district. The final score will be derived by multiplying the total contacts on all bands by the total number of VK-ZL districts worked on all bands. VK-ZL districts are ZL1, 2, 3, 4; VK1, 2, 3, 4, 5, 6, 7, 9.

9. Logs—

(a) Logs must show in this order: Date, time in G.M.T., band of operation, call of station worked, serial number sent, serial number received.

(b) A separate log must be submitted for each band. For each band an analysis sheet must be given showing: List of countries worked with numbers of contacts for each country and points claimed for each country worked for that band.

(c) A summary sheet to show—

- 1. Station call sign.
- 2. Name and address of the operator.
- 3. Phone or c.w.
- 4. List of points claimed for each band.
- 5. Grand total of points.
- 6. Brief description of gear used, power, etc., etc.

(d) A declaration that all Contest rules and regulations for Amateur Radio in your country have been observed, and that the log is correct and true to the best of your belief.

10. The right is reserved to disqualify any entrant who, during the Contest, has not observed regulations or who has consistently departed from the accepted code of operating ethics.

11. The ruling of the Executive Council N.Z.A.R.T. will be final. No dispute will be entered into.

12. Awards—

(a) N.Z.A.R.T. will award certificates to the top scorer on each band, and the top scorer in each VK and ZL district. Other awards will be announced independently by W.I.A. and N.Z.A.R.T. Additional certificates will be awarded depending on the number of logs received.

(b) **Overseas Stations:** Certificates to the highest scorer in each country (each call area in the U.S.A.). Additional certificates will be awarded depending on the number of logs received, e.g. certificates may be awarded to the high scorers on different bands and to place winners other than first or second.

13. **Entries from VK and ZL stations** should be posted to N.Z.A.R.T. Contest Manager, 86 Lytton Road, Gisborne, N.Z., to arrive not later than 31st December, 1956, while overseas logs should reach N.Z.A.R.T., Box 489, Wellington, by 24th January, 1957.

RECEIVING SECTION

1. The rules of the receiving section are the same as for the transmitting section, but it is open to all members of any Short Wave Listeners' Society in the world. No transmitting station is permitted to enter this section.

2. The Contest times and logging of stations on each band per week-end are as for the transmitting section. Logs will take the same form as for the transmitting section.

3. To count for points, the call sign of the station being called, the strength and tone of the calling station, together with the serial numbers sent by the calling station must be entered in the log. Scoring will be on the same basis as for transmitting stations.

4. It is not sufficient to log a CQ.

5. VK receiving stations may log overseas and ZL stations, while ZL receiving stations may log overseas and VK stations.

6. Certificates will be awarded to the highest scorers in each country on the same basis as for transmitting stations.

— . . . —

R.S.G.B. Telephony Contest

The first-ever R.S.G.B. Contest exclusively for telephony operation and open to stations throughout the world is to be held on November 24-25, 1956. Its aim is to encourage stations to operate on the 21 and 28 Mc. bands during the years of high sunspot activity. Contacts between any station in the British Isles with any station in the rest of the world (including Europe) will count for points—the first time, incidentally, that any R.S.G.B. Contest on these lines has been arranged.

Full details and rules will appear in a later issue of this journal.

— . . . —

TELEVISION STATION OPERATOR'S CERTIFICATE

The Australian Broadcasting Control Board has notified the following candidates that they were successful at the examination held on 12th June, 1956, for the Television Operator's Certificate of Proficiency—

Melbourne: Ian George Holmes, John Isaac Young; **Sydney:** Frederick John Appleton, Arthur John Brown, John Terry Christopher, Alan Lawrence Ellis, Kevin Arthur Long, Stanley Wainwright Owen; **Perth:** David Couch.

The examination was conducted by a Board of Examiners comprising officers of the Australian Broadcasting Control Board; Mr. R. H. Mondell, of the Department of Technical Education, Sydney; and Mr. F. A. Kempson, of the Royal Melbourne Technical College.

Examinations are conducted twice yearly, on the second Tuesday of June and December. Applicants who have passed any section of the examination on a previous occasion will be exempted from those sections for a period of 12 months; that is, two half-yearly examinations succeeding the passing of the sections.

The next examination will be held in Sydney and Melbourne on 11th December, 1956. Applications for the December examination must be lodged with the Secretary of the Board, 497 Collins Street, Melbourne, by the 15th November, 1956.

TELEVISION RECEIVERS

In order that members will have a clear understanding of the circumstances surrounding the consternation in regard to Television Receivers, Federal Executive briefly relates action taken in this matter.

On being advised that certain Television Receivers were employing Intermediate Frequencies in the 21 Mc. band, a letter was directed to the manufacturer requesting his observations on the matter. At the same time, an air-mail letter was despatched to the A.R.R.L. Headquarters posing a number of questions as to what happened in U.S.A. in regard to this particular frequency.

In Federal Parliament, questions concerning Television Intermediate Frequency were being asked and the Postmaster-General promised consideration.

As it was now most important to have all information available, Federal Executive requested Divisions to supply urgently the I.F. of Television Receivers being manufactured in their State and the rapidity with which answers came to hand was most gratifying.

The next necessity was to clarify the position of Amateurs operating on 21 Mc. should they cause interference. With this in mind, Executive wrote to the Amateur Administration requesting a Departmental ruling. It was pointed out that certain sets which did not follow the recommendations of the Australian Broadcasting Control Board used 21-27 Mc. band Intermediate Frequencies and should interference be caused it need not be due to negligence on the part of Amateur operators.

To glean yet further information to place before the authorities, on the 7th July, Executive wrote to Mr. Phillip Rand, well known in America for his work on Television Interference. Again a series of questions were asked.

Due to the activities of Amateurs discussing the problem, some public concern was evinced and this prompted a Melbourne weekly with circulation in Sydney to make inquiries. In the course of so doing, this newspaper contacted Federal Executive. It was now felt that a public statement of an official nature indicating the viewpoint of the Wireless Institute was necessary. This was devised and released to newspapers in Melbourne.

Now coming to hand were the replies to overseas letters. These indicated, to quote A.R.R.L.:—

(a) "Nearly all the TV receivers produced in U.S. today have an Intermediate Frequency in the 41 Mc. region in accordance with recommendations of the F.C.C."

(b) Referring to the 21 Mc. band and interference—

"The old 21 Mc. Intermediate Frequency was chosen by manufacturing engineers some years before Amateurs obtained a 15 metre band. Even then, however, there was interference to TV reception from shortwave broadcast stations thousands of miles away operating in the 21.7 Mc. region." Referring to tests carried out by the A.R.R.L., "These tests proved conclusively that an Amateur Station near a TV Receiver

with 21 Mc. Intermediate Frequency created real problems of interference."

Mr. Rand's letter supplemented this. In regard to 21 Mc. interference he stated:

"This TVI extended out to a radius of about three miles from an Amateur Station using 500 watts."

He also shed light on the 27 Mc. Video Frequency saying, "TV Receivers having a Video I.F. in the range 27 Mc. receive severe interference from medical diathermy and industrial heating units in addition to Amateurs in the 11 metre band."

He added, "Interference on 21 Mc. comes not only from Amateurs, but also from high power s.w. broadcast stations in Europe in the 21 Mc. range."

Mr. Rand also pointed out the effect of the h.f. oscillator of 21-27 Mc. sets caused TVI to neighbouring sets as far as the U.S. TV channels were concerned.

Relevant sections of the A.R.R.L. letter were brought to the notice of the authorities and the point of Amateur interference was again pressed.

On Thursday, 19th July, the Postmaster-General, Mr. Davidson, made an important announcement to the public concerning the Intermediate Frequencies recommended by the Australian Broadcasting Control Board and indicated that interference could result if these were not used. This, however, did not clarify the position of Amateur operators.

The Postmaster-General said that with the commencement recently of experimental transmissions by Commercial Television Stations in Sydney and Melbourne he anticipated that an impetus would be given to the purchase of Television Receivers. Accordingly intending purchasers should realise that they were securing a relatively costly and complex unit of equipment and they should

therefore take every possible precaution to ensure that their installations would provide an efficient and trouble-free service.

Mr. Davidson suggested that the public, when making their purchases, might bear in mind the technical standards which has been recommended by the Australian Broadcasting Control Board for adoption by receiver manufacturers. These standards had been formulated in consultation and agreement with representatives of receiver manufacturers at conferences arranged through the Associated Chambers of Manufacturers, for the purpose of ensuring that receivers would be designed to best meet the requirements of the Australian Television Service. Representations had, however, been made to him by a number of responsible bodies to the effect that some of the receivers now being offered for sale to the public did not comply with the standards recommended to manufacturers, and Mr. Davidson said that he felt it necessary to emphasise that prospective purchasers should, in the first place, make certain that the receivers in which they were interested used intermediate frequencies of 30.5 megacycles per second for the sound carrier and 26 megacycles per second for the vision carrier, which are the frequencies laid down in the Board's standards agreed to by the manufacturers. Unless this standard was adhered to, there was every reason to believe that serious interference to reception would result. Although a somewhat complex technical matter, he was sure that retailers would do all they could to provide purchasers with full information so far as sets being sold by them were concerned.

It was also essential, said Mr. Davidson, that all receivers should be capable of being tuned to all the ten channels which had been allocated for Television Stations in the Commonwealth. This was particularly important because, although only three channels were to be used immediately, additional ones would

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be brought into use later and, at that stage, the public could be involved in some expense in the modification of those sets which did not incorporate facilities for tuning to all the channels.

Mr. Davidson concluded by saying that although the Australian Broadcasting Control Board, as the appropriate instrumentality of the Government, has statutory powers with respect to many matters concerning television, it has no authority to prohibit the sale of receivers which do not comply with the standards which have been promulgated. The Broadcasting and Television Act recently passed by Parliament did, however, provide for the making of regulations with respect to interference and although it was desired to avoid the making of regulations if at all possible, because of the wide implications involved, such a course might ultimately be forced on the Government.

A fortnight later, on Thursday, 2nd August, Mr. Davidson made a further announcement.

The majority of Australian manufacturers of Television Sets have given assurances that sets being made by them fully comply with the technical standards recommended by the Australian Broadcasting Control Board and agreed to by representatives of the manufacturers, the Postmaster-General said.

Mr. Davidson said he had received these assurances following his recent warning that intending purchasers of Television Sets should take every precaution to ensure that receivers in which they were interested met with Control Board standards.

Nevertheless, the Minister said, he was informed that certain receivers were still being sold which employed intermediate frequencies, differing from those recommended by the Board.

The Board's recommended intermediate frequencies were 30.5 megacycles per second for sound carriers and 36 megacycles per second for the vision carrier.

"I want to repeat that receivers employing intermediate frequencies, other than those recommended, could be subject to objectionable and serious interference which could be difficult to eliminate," Mr. Davidson said.

The Minister said that because of the non-standard frequencies being used in some receivers, interference could be caused by the transmission of Amateur Radio Stations operating in their authorised bands. There were some 3,000 of these stations in the Commonwealth.

"Licensees of Amateur Stations were normally obliged to ensure that their transmission did not cause interference to other services, but they could not be held responsible for interference to Television Receivers which did not comply with standards recommended by the Board.

"The Wireless Institute of Australia has already been informed accordingly and an assurance given that no restriction would be placed on the present activities of Amateur Radio Stations in such circumstances," added the Minister.

"I emphasise that intending purchasers of Television Receivers should seek assurances from retailers that the receiver they intend to buy complies with the recommended standards of the Board," Mr. Davidson said.

In furtherance to this, Executive received from the Amateur Administration, a reply setting out the attitude of the Department and herewith is an excerpt of relevant portions.

"As you are, of course, aware, present practice provides that, where Amateur Station transmissions in any authorised band cause interference to medium frequency broadcast reception the Amateur Station licensee concerned is obliged to accept responsibility for clearing the interference and to desist from transmitting until such time as it is cleared to the satisfaction of the complainant.

"It is proposed to apply similar principles generally in regard to interference caused to Television reception.

"Where it is established, however, that the interference experienced by the Television Receiver arises from its employment of intermediate frequency amplifier channels utilising frequencies within bands authorised for use by Amateur Stations the Department will not require Amateur Station licensees to accept responsibility to clear the interference or to restrict their legitimate transmitting activities in any way."

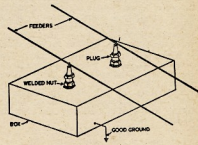
It is therefore apparent from the foregoing that Federal Executive has been most active in taking all possible steps to bring about this very satisfactory solution. It is hoped that members will cease to be perturbed in this regard.

Finally, Executive is confident that Members will be most circumspect in their efforts to avoid interference and should this unfortunately arise, will extend their fullest co-operation.

HINTS AND KINKS

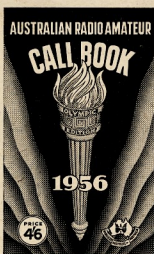
LIGHTNING PROTECTION

A very useful lightning protector can be made simply by taking two 14 mm. car spark plugs and re-cut the thread to 3" S.A.E. Now get two nuts to screw on. Take the nuts and weld to a mild steel box which has been welded airtight with only the two holes which the nuts are welded over. Heat this box and whilst warm, screw the plugs into the nuts. This is now an airtight box and moisture will not corrode the points. (This is set to 0.040".)



Secure the unit to a water pipe or suitable ground. Bring the feeders to just connect to each of the plugs and then carry on to the transmitter. You will be surprised at the static, etc., that will leak across the points.

—By ZS4CM, reprinted from "Radio ZS," Sept., 1955.



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VK5WC—THE WOOMERA AMATEUR RADIO CLUB

By R. A. CATMUR,* VK5FY, Hon. Secretary, Woomera Amateur Radio Club

THE call sign VK5WC, of the Woomera Amateur Radio Club, probably brings several thoughts to your mind when you first hear it. Maybe the call itself promotes a smile, particularly when you receive our card, or perhaps you think of the QTH—Woomera, a place much talked about in the press from time to time. No doubt many of you are thinking "So what? It's another Amateur Club, what's interesting about that?" But, how many Amateurs have their QTH shown as Woomera? The answer is none, and therein lies a story, the formation of the Club in Woomera.

Wherever you have a township the size of Woomera, there are bound to be a few Amateurs, and since Amateur Radio is their hobby they set about going "on the air." In Woomera their first disappointment is a letter from the P.M.G. Department which states:

"It is regretted that you cannot be authorised to operate from that address."

To the best of our knowledge Geoff Svenson, VK3AHS, was the first Amateur to receive such a letter, way back in 1948, so he applied to the Department of Supply for permission to operate in Woomera. Unfortunately, as so many Amateurs have found, the average man (even in high places) is not aware that the Amateur has Regulations to which he must adhere, but imagines that we get our transmitter going, find a quiet hole in the frequency spectrum and press on regardless. So, not without good reason, the Department concerned replied, stating that if a club was formed, they would again consider the matter.

Going back through the files, we find that such a Club was thought about, but try as he may, VK3AHS just could not seem to find enough Amateurs, or those interested in Amateur Radio to really start something. Despite Geoff's efforts, the whole thing became bogged down and eventually he was posted elsewhere, when of course he was happy to be "airborne" again.

About this time, Don Burkitt, VK3FP, arrived in the area, and he too tried to overcome the problem. Again, the only licensed Amateur in Woomera was himself, and he got nowhere fast—to coin a phrase. There were plenty of people interested in general radio, but only a couple really interested in the Amateur aspect. So once again the spark was there but the kindling wood damp. In 1952 VK5FY arrived, and it was not long before VK3FP and VK5FY were in cahoots and started to fan the spark. A meeting was held and the three present, Don Burkitt, the author and Mr. Geo. Eastland, formed themselves into a pro-tem committee, VK3FP President, VK5FY Secretary, and George Eastland Treasurer—with no funds, nil! It was decided to produce a constitution for the proposed club and if the authorities accepted it, then the club could be formed.

Group Captain A. G. Pither, R.A.A.F., was the Superintendent of Woomera at this period, and he assisted in the club's formation at the higher levels by somewhat smoothing out the path over which our request must travel. In July, 1953, the constitution had been approved by the Department of Supply, and then VK5FY visited the P.M.G. Wireless Branch at Adelaide to discuss the license application.

On 6th August, 1953, the first general meeting of the club was held, and present were the Patron, Grp./Capt. A. G. Pither; the President, VK3FP; Secretary, VK5FY, and Treasurer, Mr. G. Eastland, with two prospective members.

At this meeting the President stated that the Club had an approved constitution, the license was on its way, and a clubroom had been acquired (an old powerhouse approximately 15 x 20 ft.).



Members of the Woomera Amateur Radio Club. Left to right: Mrs. ("Cec") Angrave; Ron Catmur, VK5FY; Ray Farmer, VK5FF; Keith Angrave, VK5ZAS; Bernie Waight, VK5QW; Sid Murray; Mick O'Reilly; John Allan, VK3EI.

This meeting was a milestone in the progress of Amateur Radio at Woomera, and it was agreed that at the next meeting (which would be well publicised) the members would elect their own Committee. The six people present then completed their application forms, paid their subscriptions and the Club was under way.

On 10th August, 1953, the Club License was received and VK5WC went "on the air" with a transmitter and receiver loaned by the Department of Supply.

Since that date when VK3FP and VK5FY added a little more congestion to our bands under VK5WC, the following Amateurs have been members of the Club: VK5OC (Len Baker), VK5JE (Ted Cawthron), VK5FE (Ray Farmer), VK5QW (Bernie Waight), VK5ZAS (Keith Angrave), and VK3ARO (Ray Pulford); VK5FF, VK5QW and VK5ZAS took their examinations at Woomera, also an ex-member, VK5ZAZ (John Gluyes) received his license after he had left the area.

We must acknowledge gratefully the help received from the Department of Supply during the Club's formation, and afterwards by the loan of equipment. Our special thanks to Grp./Capt. A. G. Pither, R.A.A.F., who, as Superintendent during those days, gave us much encour-

agement and support; and to Mr. John Maddern who assisted us in problems peculiar to Woomera. Our thanks also to Captain J. B. Newman, R.A.N., the present Superintendent, for allowing us to publish the history of the Club.

The Club has been affiliated with the Institute since its inception, and the majority of its members are also individual members of the Institute.

The rig at the Club consists of an AT14 Transmitter (purchased from disposals) which has been modified for plate and screen modulation and uses an 813 in the final.

We have three antennae—a rhombic firing into VK6 land, which is one wavelength long on 80 metres (what it is to have wide open spaces!). Its efficiency can be guaranteed by the VK6 boys who reside in its major lobe! There is a 40 metre dipole, and a long

wire 132 feet long. The receiver is a B28 (CR100), backed up by members' own receivers from time to time.

The Club took part in the first R.D. Contest to come its way, when VK5OC (Len) knocked up a good score at VK5WC, and no doubt assisted VK5 in winning the Trophy. The rhombic was originally erected for that Contest, and since it was still standing, it helped VK5WC log VK5FF, VK5WC log VK5FY and VK5WC knock up a few points last year. VK5 won it again, and we hope to help this year.

The Club's QSL policy is 100% to both Amateurs and Listeners (Listeners please note that a stamped addressed envelope will assist our Treasury no end). Up to date we have some 200 cards on the walls, including a few rare ones, but relax boys, we're a long way from the DX C.C. We have been trying hard to "work all W.I.A. stations" but so far VK5WI is the only one who has sent us a QSL—how about it, W.I.s.?

During its lifetime the Club has been publicised on the A.B.C. when an actual QSO was recorded and broadcast. We have received many personal visits from Amateurs, including Gs and Ws. We now seem to be well established in Woomera, and hope to meet you on the band one day. 'Til then, 73 from the gang at VK5WC.

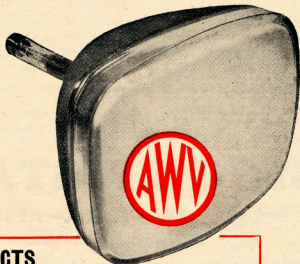
*P.O. Box 38, Woomera, South Aus.

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DX ACTIVITY BY VK3AHH[†]

PROPAGATION REPORT

3.5 Mc.: Conditions do not appear to be particularly poor on this band, but world-wide activity seems to centre around the higher frequency bands which have improved with the commencement of another sunspot cycle.

7 Mc.: All continents were well represented on this band. Nevertheless, conditions have been somewhat erratic and the expansion of commercial stations does not encourage DXing.

14 Mc.: This band again showed fair to good conditions to all continents. Due to the general improvement of this and the higher bands, it is difficult to define time of break-throughs.

21 Mc.: Contacts with all continents have been reported, and propagation generally seems to stabilise and improve.

21/28 Mc.: Africa and North American openings have been reported.

NEWS AND NOTES

Things look bright for a new DX-pedition to Zanzibar. ZEZJO expects to operate there from 18th August to 4th September, using the call **VQ1JO**. One frequency may be 14035 Kc. (from NC DXC).

It is hoped that many VK-DXers were able to contact Spitzbergen. SM8KV/Portable having been there from 3rd to 17th August (from 5WO).

Cocos Islands are back on the Amateur-Radio map! VK1RW is on the low end of 7 Mc., on c.w. (from BERS195).

Danny Well has commenced operation as VK9TW—Nauru.

During the last couple of months, W2A15/MM, aboard "Pioneer" Cove, has visited a number of Australian ports. We were very pleased to meet you, Pat!

Along with a bag full of information on doings of the s.b.b. fraternity (see "Activities"), 3WR reports another addition to the list of s.b.b. VKs: VK3AHH—using QRP on 14 Mc. and around 3.7 Mc. Thank you, Jack!

About this time two years ago, the S.w.I. Group of the W.I.A., Vic. Div., was established, and Groups in other States followed. By joining the Groups, beginners have the chance of learning their initial steps in Amateur Radio and can, at the same time, participate in W.I.A. activities. Also, W.I.A.-L numbers are available to all financial members. Like the Vic. Div., other Divisions will have found that these Groups provide a very desirable influx of Associate Members, and there can be no doubt that the entire scheme, suggested more than two years ago, has been a tremendous success. Congratulating the S.w.I. Groups on a fine job done, let us encourage the Groups in all States! Beginners are always worthy of our assistance!

QTHs OF INTEREST

(from 5AB, BERS195, and the Northern California DX Club)
 VP5RR—Via WBUTX.
 VP5MS—Via WBUTX.
 Ex-VK1ZM—Bernie Shaw, 22 William Road, Hove, Bk. N.S.W.
 ZD6BX—Victor Thorne (ex-G3DFI/VJ1BX), Blantyre Airport, P.O. Chleka, Nyasaland.
 Ex-ZM5AB—Evelyn Scott, 266 Alamitos Ave., Long Beach 2, Calif., U.S.A.
 KG1BF—Via WJUGL.
 VS4BO—Via VE1B.
 OD5BC—Box 2559, Beirut, Lebanon.
 VK1RW—R. C. Widows, H.M.W.T. Station, Direction Island, Cocos Islands.
 ZS2ML—C/o. Secretary of Transportation, Private Bag 193, Praetoria, South Africa.

[†] Hans J. Albrecht, 10 Belgravia Ave., Box Hill North, E.12, Vic.
 * Call signs and prefixes worked.
 x—zero time—G.M.T.

ACTIVITIES

3.5 Mc.: 3AHH heard ZMEAS.

7 Mc.: Laurie 2AMB reports KP4CC, VE2LH, VE8ZG, CO3OX, and VE1AR. VE8ZG (on phone) reports 2AMB follows with VE2G and VE2LH. BERS195 heard FB8ZG (1702z), LZ2KCS, 11ZCT, JAZZO, JANAE, JAREO, UNKAA, UPKRA, VFAQ, VK1RW, VQ430, VQ4ERR, VSIGV, YQ3RT, John WIA-13019 adds SM8BT1, LZ2KG, YUHS, YUICE, DL7E1, DL8NA, YUFCF. The next in line is Dave Jenkins with DUDJO, F1AA.

14 Mc. C.W.: 2AMB: CT* and HP1EH, P12MC, VERMO, KWBCD, VS1. 2APL: KW6CD, Rud 2AQ: VS1, VS9, ZAKAB, J4, VK5, 7BOI*, KL7UM, 45TPT*, and VESAW, USUBU, DL OF, FB8ZJ, 1. Allan 3HL: PA*, UA6KJA, UA3BF, SM* USUBU, EISC*, UA1KAE, XE*, KXVTH, YQ2AB, YU, Jack 3JA: VP7BE, YV0AA, VP9BO*, OE*, Lance 3ZA: HK8KY, UA1KAE, DJ*, VERN*, Des 3DK: 954*, DL*, ZD6V, HA*, UA0V, LU*, Ray 3BK: G*, 45TR*,

Austin 3MO: UC2KAB*, EIBS*, UA6KJA, VK9TW*, BERS195: DL, KXG, LA, OH, SM, VS6, WIA-13019, QYVZ, ZAKAB, VP9BM, UC2KAB, UA3EG, P. Dave Jenkins: XE, XZ2AD, VU2KM, UA4KCE, VS6, UA1KAE, VK1GA, DL, OE, KP4CC, KL7WAF, ON8FC, G, KG1AG.

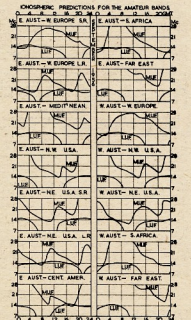
14 Mc. M. 2AMB: 954HN, HA, VR, VK5, STW, FURAC, VY5BZ, YS1MS, VP5AO, 2AQ: CT*, JA*, VR2*, ZK1BL*, VE* and VS4, Z2C1, Neil 3HG: FA3ZG, EA8BC, VP1EK, EATIM, VK9TW*, LZ2KN*, ZC3CF*, FB8ZC, 3HL:

FA3ZG*, FAS1B*, OE*, VP7NB, VQ5GC*, CT*, VERN*, ZEEKP*, VP5AO*, VQ4ERR*, 45TYL*, CO2VW, P12CE, VQ430, EA 1*, G, JA: T99NP, Bram 5AB: EA*, P12A1, UQ2AN*, HB9*, VK9TW*, GW4CC*, ZK1BS*, FAS1B*, Q24ER, OT*, P*, ZSHFN, ZM8AS*, VR1D 1*, CN8MM*, KA*, JA*, VP5BR*, 954AD, 954HN*, G*, VR1B/M*, VE*, VP5CY*, CT*, KL7WFM*, KT1YX*, EADDE*,

KG1G, AWO: CT*, ON*, GW4CC*, VE*, CN8MM*, G, G1SCWY*, FMTWQ*, KW4CE*, VK9TW*,

14 Mc. S.B.B.: Jack 3WR: WPU7G, WACHZ*, VEKKT*, WBEA, VERNZ*, GW5HN, WQNN*, GSB7*, WP2J7*, W4KOW*, KQ4USA*, WBG0P*, WIAFX*, WGGCX*, WSCAJ*, Cyril 3AE: KQ4AA*, QHJ*, XE3JK, XE3CF (*), Q4QEO*, OZ7C*, P12MC*, WACXX/Air Mobile* (over North Pole!). Lindsay 4AB: ZS1DF, KL7BRA*, CO5LF*, ZB1BS*, KQ4USA*, K4UBS*, VQ4RO, KRGQ*, Clive 4CC: GW5EHN*, ZB1CZ*, ZD1BF*, OM4CC*, Vince 4VJ: KRQ1*, KR4JK*, PS9H*, Z80V*,

(All the above s.b.b. info. was forwarded by 3WR—thank!)
 PREDICTION CHART FOR SEPT., '56



21 Mc.: 3APL: XE1PJ*, FBACR*, 3HG: G6FQ*, ZP5FP*, KP4ADY*, VP1NC*, P12MC, HR1LW*, VQ5GC*, HC1ARE*, 3JA: ZD4BV*, ZEZJZ, ZS*, PSRT*, ZEEKP*, 45TYL*, FB8ZC, CT*, OQ5BE*, VP0L*, ZS3S*, MP4BWW*, VS480*, HA*, EA9AZ*, VK9TW*, 5AB: F87-R*, VQ5GC*, ZS3KG*, ZS*, 45TYL*, T8EX*, KP4ADY*, VP1NC*, HR1LW*, ZD6RM*, VQ-4PI*, VQ2GV*, ZEEKP*, KV4IB, KV4BO, VS480*, HC1ARE*, ZK1RL, ZS2DG, KZ-5GD*, VS*, ZEZJK*, X41R*, VS9RP, VP-5MS*, CO2BK*, C8GAO*, C8GB1*, ZE4JR*, 5WO: ZS*, VS*, ZD6RM*.

21/28 Mc.: 3HG reports ZS* and W5. 5WO also mentions ZS3DS*, ZS6TV* and W*.

Rare QSLs were received by: 1AMB: FO8AN, ZK1AC, VR1B, PY4AO, VP2DA, VP1NS, VP9BM, JZACG, LA8B, 3HG: BV1US, VP7NQ, 3JA: VP2DA, C10AA, VJ1AA, ZD4BV, VP5DC, VP5DC, MP4KAC, OD5AV, VP4LF, VS4BA, 5WO: HZ1AB (c.w.), VP1NS, FURY/FC, CT-3AN, CX1CO, BERS195: LZ1KPZ, VK1ZM.

Thanks to the Northern California DX Club, and VKs 2AMB, 2APL, 2AQJ, 3HG, 3HL, 3JA, 3WA, QSP reports 3ARE, 4AB, 4CC, 4VJ, 3ZA, 3AE, 4AB, 4CC, 4VJ, 3AB, 3DK, 3RK, QSP report 8DK1, 5WO, and s.w.l.s. BERS195, WIA-13019, and Dave Jenkin.

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YL CORNER

BY PHYL MONCUR

A luncheon engagement with VK3YL and a most enjoyable couple of hours spent in her company. We had not met previously and so were new to each other. Both had W.A. badges, this made recognition a cinch. We chatted on many subjects of mutual interest, but of course radio took predominance. It was most amusing to find out how somebody quite small in physique, just a tiny bit shy and very feminine in approach could have tickled such a mustache as I have on an Amateur license. I'm afraid I bargained her with questions. And now I'd like to introduce her to you.

VK3YL, Mrs. Austine Henry, received her Amateur license 26 years ago last May. She was the first YL to sit for the A.O.C.P. exam in Melbourne and at that time became the first YL in VK to receive a license and the third to hold the letters "YL" in her call.

But that was not the beginning of it all by a long time. The radio bug bit her long before that when Austine was quite a little girl. She had been sick and had her tonsils out and was convalescing, when a kindly uncle promised to buy her a present and asked her what she would like. She didn't hesitate for a moment, she knew what she wanted most of all—a wireless set. At this time there were no wireless sets in the family; it was just like a kid these days asking for a l.v. set. Also there were no radios even remotely interesting. The radio amongst her family or friends. It was just something that was in her, herself.

She got her wireless, a crystal set it was, and she was very great joy and pride. Today it has become a family heirloom, she still wouldn't part with it for anything. She gradually got over her excitement, it pulled it a bit less and out how it worked, started reading books on radio, then built other crystal sets and from there went on. Always seeking to increase knowledge and always finding it more and more interesting.

When she was working for her ticket she found old Amateurs were always ready to help. She recalls Chris VK3JR and Max VK3BQ both being wonderfully helpful. Her then husband—Bob Hill—also played a part in helping her with studies in theory and code. Bill, though not an Amateur himself, has a very considerable knowledge of radio and has never ceased being interested in her hobby with her and is just the sort of husband a YL can't any more. They have one son, Ian, Austin, aged 20, and up until recently he has no interest in radio whatsoever. He just liked fishing, football, cricket and his motor-bike and all the things young men seem to like. This was secretly just a little bit disappointing to Austine, but over the last couple of years Ian has started to "get" young Austin, too, and he is now doing a course in radio engineering. Austine is delighted.

She has won the certificates DXCC, WAC, WBE and BERTA and just recently was awarded the YL-WAC-VL, the first issued ever in the world. Also is awaiting confirmation of the QTC and needs only one more confirmation to be eligible for the silver medal award of the DUF. Pre-war, VK3YL was active on 80, 40 and 20 m.w. and 36 Mc. phone, but post-war has been active mainly on 14 Mc. Her QTH is at Murrumbidgee and is in a fairly good location for DX. The boys DXing mainly for the new friends she has developed all over the world and particularly in G and W lands. She entertained Evelyn Cook WENZP during her stay here last year and hopes some day to visit Evelyn and many of the other friends she has made.

Post-war she has worked 180 countries with 168 confirmed. Pre-war world WII she was a member of the Royal Australian Air Force Wireless Operators' Club (and was a member of the Wireless Reserve) and during the war years helped to instruct in morse code classes at the Wireless Institute (Victoria Division) while her OM was on active service.

Her other interests include motoring, she loves driving herself and also classical music, particularly enjoys composers of the 18th century, according to her OM, is a very excellent cook, but cooking really isn't her favourite past-time, but then how very understandable with that waiting time on the radio. She occasionally operates phone, but prefers c.w. for which she has a pretty mighty fist. Listening to her c.w. seems to copy any speed at all on the band and sends it back just as fast. But then 26 years of c.w. is one heck of a lot of practice.

YLs and XYLs, you are invited to contribute to this year column. Next issue, "TV Fever."

S.W.L. SECTION

The weather has been beautiful and I've received correspondence from VK2, 3, 4, 5, 6 and 7. Yes, you can read that again! VK2 to 7 inclusive. "What more could I want?" you may say. Just VK2 (Australia) Territory VK3 and VK5 so as to include all VK prefixes in this column. So if you live in any of these territories, just drop me a line telling me all about your activities.

VK3-NEW SOUTH WALES

B. F. Cartwright from VK2 is a young lad, 17 years old. He read of s.w.l.'s in the July issue of "Amateur Radio" and he has been making queries about s.w.l. activities. He hasn't yet had much experience in this game beyond sending a crystal set which he has had for some time. He is very keen and has been giving him hours of enjoyment. I'll be answering your queries as soon as possible my friend.

No information has been received from Stan Abbey or Jack Ashley, so we hope you two boys are still doing alright.

VK3-VICTORIA

July Group Meeting: This meeting of the Group was the form of a surprise night. Six members of the Group were handed a sealed envelope in turn in which was enclosed either a question to be publicly answered or instructions to be carried out. The first question was from an instruction to David 3ZAQ requiring him to tell us how he achieved his v.h.f. 150. So a question asked of Frank Nollan as to the techniques he used in listening for DX stations. The evening was very instructive and entertaining.

Coming Events: Members of the VK3 Group are asked to keep in mind the following: Sept. meeting—Tuesday, 25th, talk on Radio Astronomy by Ron 3ASV. Oct. meeting—Tuesday, 30th, talk by Len 3LN. Don't forget any of these meetings, chaps.

Correspondence: Henry Zaal, W1A-13037, from Traralgon, has honoured us with another letter. He included a list of stations he has recently heard and also gave us a very interesting note to mention that he is now constructing building an audio amplifier. Hope everything goes well Henry, and let's hear more from you.

Another country correspondent, Dave Jenkin, W1A-13039, has found time to put pen to paper. Dave is using a t.r.f. rx, the line up being as follows: IN5 6AV6, IN5 detector followed by an audio stage of 4 transistors, namely OC71, OC71 and a pair of OC72 in p.p., the latter being in a push-pull arrangement. The antenna is a multiband affair of two 66 ft. lengths, one length horizontal, the other semi-vertical, fed with a three-wire open wire line. This antenna can be altered by switching the connections to have the two sections either in or out of phase. The antenna was described by 3ARH in "A.R.B." for May 1963. Dave has some plans for more building, too. Let's know all about it when it comes off Dave.

S.w.l. 100 Certificate: The first of this certificate has been won by yours truly and he is very proud of it. This is one well worthy try for and it's not too hard either. To qualify you must be resident in Victoria and produce evidence in the form of confirmations of having heard 100 Amateur Stations. This certificate is free to W.I.A. members, while non-members of 2/6 is charged to non-members. Confirmations must have been made since 1/1/64. Cards should be forwarded by mail to the Vic. Div., W.I.A., 191 Queen St., Melb. and return reg. mail postage should be enclosed. So have a go at this one.

APPEAL TO AMATEURS

Interference to Slow Morse Transmissions
Some of you apparently may not know that the Vic. Div. W.I.A. conducts these transmissions on the 10 m.w. band from 3.5 to 3.6 every Sunday evening from 8.30 p.m. to 9 p.m. E.A.S.T. Interference on these transmissions has been very heavy of late and numerous complaints are being received from s.w.l.'s. Interference outside VK3) and also local stations have been heard on the freq. 3.0 OM, for our sake when on 80 m.w. listen first before throwing the switch. You may save yourself the embarrassment of having your call listed in these notes.

VK3-QUEENSLAND

VK4 is kept in the news by a letter from Donald Scott VK4B writing from Mount Morgan. Don is trying to arouse some interest among chaps in his area and so we wish him luck in his efforts. He has a rather impressive list of gear including an AR7 and a Panoramic RX. However, full details of his equipment are too long to give here.

VK3-SOUTH AUSTRALIA

Mac Hillard on behalf of the VK3 Group provides some information on their activities. The

* Compiled by: Ian J. Hunt, W1A-13007, 101 Robert Street, Northcote, Vic.

July meeting of the Group was held on the 16th and after some general discussion they were shown over Radio Station 5KA by Mr. Rob Patton and pleased to meet him. The thanks of the VK3 Group go to Mr. Patton and Len Cragen for making the visit possible. Mac also included a list of stations heard. Thanks for your letter Mac.

VK6-WESTERN AUSTRALIA

From Inglewood, I am informed by K. C. Bicknell that there are at least two s.w.l.'s in W.A., himself and Roger Fort. Both boys are using converters fed into AR8 RX's and like the VK3 boys looked forward to the R.D. Contest. Hope to hear a lot more of your activities from VK6.

VK1-TASMANIA

My correspondent from Launceston unfortunately only gave his first name which was Glad to have your letter anyway. Roger is using a 4-tube home-brew rx and is at present constructing another set. His antenna is a window half wave on 40 m.w. 38 ft. high.

Well unfortunately as space is limited, I cannot include details of the logs you have all so kindly sent in. I do however feel that the news of activities is very important and should take precedence over reports on the bands.

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FEDERAL, QSL, and DIVISIONAL NOTES



FEDERAL

Fed. President: W. T. Mitchell, VK3UM.
Fed. Secretary: L. D. Bowie, VK3DU, Box 1611W, G.P.O., Melbourne.
QSL Bureau: VK3JR, 23 Landale Street, Box Hill, E.11, Vic.
Awards Manager: A. G. Weynton, VK3XU, 5 York Street, Boroach, Vic.

NEW SOUTH WALES

President: Jim Corbin, VK2YC.
Correspondence Secretary: H. King, VK3ASU, 19 St. Pauls Road, Balgowlah, N.S.W.
Meeting Night: Fourth Friday each month at Science House, Gloucester Street, Sydney.
Divisional Sub-Editor: Stan Bourke, VK2EL, 17 Clidland Ave., Canterbury.
QSL Bureau: B. Corbin, VK2YC, Box 1734, G.P.O., Sydney (Inwards and Outwards).
Zone Correspondents: North Coast and Tablelands: Noel Hanson, VK3AHH, Ryan Ave. West Kempsey; Newcastle: Les Sparke, VK-2AOR, 18 Kahlbah Rd., Highfields, via Adamstown; Coalfields and Lakes: H. Hawkins, VK-2VL, 9 Comfort Ave., Cessnock; Western: W. Stitt, VK2WH, "Camblough," Forbes; South Coast & Southern: E. Fisher, VK2DY, 2 Oxide St., Warrawong; Western: W. W. S. Edge, VK2AJQ, Wallace St., Coolamoon; Tamworth: F. W. Fowler, 4 Thompson Crescent, Tamworth.

VICTORIA

President: G. Dennis, VK3FT.
Secretary: F. G. Hall, VK3YS.
Administrative Secretary: Mrs. May, C.O.R. House, 191 Queen St., Melbourne.
Meeting Night: First Wednesday of each month at the Radio School, Royal Melbourne Technical College.

FEDERAL

REGION I CONFERENCE

The Second Triennial Conference of I.A.R.U. members in Region I, was held in Stress, Italy, on 14-15-16 June, and the sponsorship of the Associazione Radiotecnica Italiana, about forty official delegates from fourteen countries were present, and three other societies were invited. Present were: Your Secretary (I.A.R.U.) and WILVQ of A.R.R.L. were present as observers.

E. Hammans, G2IG, President of the Radio Society of Great Britain, was elected Chairman of the Conference, after welcoming speeches by Sig. Roberto Sassi, President of the host society and President of Honor of the Conference; the Mayor of Stress; the head of the Tourist Office; and, Capt. Per-Anders Kinnman, SM2ZD, President of Svenska Sändare Amatörer and Chairman of the Region I Executive Committee.

The first session was devoted initially to the organization of the Conference and to receiving the reports of the officers and of the Executive Committee. Jean Lipp, H89J, was elected Chairman of the Administrative Committee, and H. A. M. Clark, G6OT, Chairman of the Technical Committee. After discussion, it was decided that the next session should be held in delegation to the C.C.I.R. meeting at Warsaw in August. A number of recommendations by the Sig. Roberto Sassi and by the host society business matters of the Region I Division were acted upon.

It was voted unanimously to send delegates to the next I.T.U. Convention. A considerable fund has already been set up to cover the expenses of I.A.R.U. representatives from Region I, and international contributions to the fund were voted later in the meeting. The Executive Committee was authorised to appoint delegates to the time comes.

The Executive Committee presented a draft of Rules for the Region I Division of the International Amateur Radio Union. After discussion, the Rules were adopted with a few minor amendments.

The next two days were devoted to meetings of the various administrative and technical committees of which forwarded recommendations to be acted upon at the final session. On Friday, the delegates enjoyed sightseeing to a banquet and a ball arranged by the host society.

The final session was held on Saturday. In connection with the problem of non-Amateur stations, the Region I Division adopted a standard form for reporting such stations. It was decided to limit reporting at first to broadcast stations and to identify commercial stations, with a wider range of monitoring to follow after the societies and their members have gained experience. The Con-

Divisional Sub-Editor: Phyl Moncur, 235 Union Road, Ascot Vale.

QSL Bureau: Inwards and Outwards—W.I.A., 191 Queen St., Melbourne, C.I. Vic.

Zone Correspondents: Central Western: W. J. Kinsella, VK3AKW, Magdala, Lubeck; South Western: W. Wines, 48 Cranley St., Warrnambool; East: W. Zimmer, VK4AW, 70 Skene St., Newtown; North Eastern: L. Ellison, VK3ALE, 72 Orr St., Shepparton; Far North Western: M. Folie, VK3QZ, 501 Lemon Ave., Mildura; Eastern: J. Sparke, VK3KJ, 20 Main, shall Ave., Moie; North Western: C. Case, VK3ACE, Cumming Ave., Birchbirch.

QUEENSLAND

President: Frank Bond, VK4ZM.
Secretary: W. J. Rafter, VK4PR, Box 638J, G.P.O., Brisbane.
Meeting Night: Fourth Friday in each month at the State Service Union Rooms, Elizabeth Street, Brisbane.
Divisional Sub-Editors: F. B. Bond, VK4ZM, and W. J. Rafter, VK4PR.
QSL Bureau: Inwards—J. Flies, VK4JF, Wanda St., Buranda; Outwards—Miss Clair O'Brien, 93 Jardine St., Stafford.

Zone Correspondents: Maryborough: R. J. Glassop, VK4BG, 80 North St., Maryborough; Townsville: R. Wilson, VK4RW, Hogan St., Stuart, Townsville.

SOUTH AUSTRALIA

President: W. J. Bulling, VK5XK.
Secretary: B. W. Austin, VK5CA, Box 1234K, G.P.O., Adelaide. Telephone: UX 2821.
Meeting Night: Second Tuesday of each month at 17 Waymouth St., Adelaide.

ference urged occupancy of all the Amateur bands by all Amateurs to discourage "squatters' rights" use of the bands by non-Amateurs, but they disapproved of tactics involving deliberate interference to legitimate stations sharing the 40 metre band.

The delegates commended the growth of reciprocity in licensing, especially among European nations, and expressed the hope that this in this direction would continue. The Administrative Committee had discussed the possibility of Region I, and the International Commission, permission to use the 50-54 Mc. band during the present part of the sunspot cycle, but the chances appeared most remote since TV is operating there in Region I. The French and Russian Amateurs already having a segment at 72-78 Mc. it was agreed that other Region I members seek privileges in that segment. An extensive paper submitted by the Savez Radiomaters Jugoslavije, concerning ways of increasing comradeship and good will among Amateurs is to be studied in greater detail. The assembly also urged that more emergency networks be set up. This action followed reports by several societies to the Administrative Committee on the systems in use in their countries. The European Band Plan was hailed as a splendid example of international co-operation, and the only change voted was to move the limit for exclusive c.w. operation in the 20 metre band from 14125 Kc. to 14100 Kc.

European Band Plan

- 3500-3600 Kc.—Telegraphy only.
- 3600-3800 Kc.—Telephony only.
- 7000-7100 Kc.—Telephony only.
- 7050-7150 Kc.—Telegraphy and Telephony.
- 14000-14100 Kc.—Telegraphy only.
- 14100-14350 Kc.—Telegraphy and Telephony.
- 21000-21150 Kc.—Telegraphy only.
- 21150-21450 Kc.—Telegraphy and Telephony.
- 28000-28200 Kc.—Telephony only.
- 28200-28700 Kc.—Telegraphy and Telephony.

The Conference encouraged the growth of s.b. after reports on progress to date were heard at the Technical Committee sessions. It

Divisional Sub-Editor: E. C. Daw, VK5FE, P.O. Box 44, Gawler, S.A.
QSL Bureau: Geo Luxton, VK5RX, 27 Belair Rd., West Mitcham, S.A. (Inwards and Outwards).

WESTERN AUSTRALIA

President: F. A. T. Tredrea, VK6FT.
Secretary: J. Mead, VK6JL, Box N102, G.P.O., Perth, W.A.
Meeting Place: Perth Technical College Annex, 1000 Hay St., Perth.
Meeting Night: Third Tuesday of each month.
Divisional Sub-Editor: E. J. R. Cowles, VK6EJ, P.O. Box 11, Bencubbin, W.A.
QSL Bureau: Bumblebee, VYRU, Box F319, G.P.O., Perth, W.A. (Inwards and Outwards).

TASMANIA

President: F. J. Evans, VK7FJ.
Secretary: M. Hurburgh, VK7MH, Box 371B, G.P.O., Hobart.
Meeting Night: First Wednesday of each month at the W.I.A. Club Room, 147 Liverpool St., Hobart.
Divisional Sub-Editor: H. J. Bracken, VK7BR, C/o P.O. Bronte Park.
QSL Bureau: K. A. Johnston, VK7RX, 34 Tower Rd., Newton, Tas.
Zone Correspondents: Northern: K. J. Briggs, VK7LX, 18 Melbourne St., Launceston; North Western: J. Pattison, VK7UW, 35 Mark St., Burnie, Tas.

PAPUA-NEW GUINEA

President: P. M. Nolan, VK8FN.
Secretary: P. Lloyd, VK8QO, C/o O.T.C., P.O. Box 56, Port Moresby.
Divisional Sub-Editor: To be appointed.
QSL Bureau: P. Lloyd, VK8ZAL, C/o Commonwealth Dept. Works, Port Moresby.

was further recommended that more use be made of translators, especially in emergency gear. To foster exchange of technical information, and thus speed up technical progress, it was suggested that each editor of a society magazine will send English abstracts of the main articles in every issue to the other societies in the region.

The I.A.R.U. Secretary was invited to speak on the problem of Amateur representation at International Telecommunication Conferences. Pointing out that only governments have voting rights at these gatherings and that the main question is to arrive at a formula for representation formulated long before the actual conference by each government, the Secretary urged that Amateur groups try to influence the representatives a couple of years in advance so that the government's recommendations in each case will be as favorable as possible toward Amateurs.

A budget of 1200 pounds sterling per annum was adopted, with each Society contributing an amount in proportion to its membership. A permanent V.H.F. committee was set up, with DL3FM as chairman and ON4BK as secretary; membership is open to any of the societies.

The gentlemen listed below were elected to succeed the retiring officers of the Committee for the years: H. Laett, HB8GA, Chairman; Arthur Milne, G2MI, Secretary; Jacques Simonnet, FD9W, Treasurer; Ofrid Lührs, DLKIV; Massimo Giovannini, IZ3XX; Per-Anders Kinnman, SM2ZD; and Janex Zindrade, YU1AA.

The delegates commended the Associazione Radiotecnica Italiana on its excellent preparation for the Conference. Simultaneous translations of all the speeches were made in English and French; clerical arrangements were well planned; and the personal arrangements for the delegates were excellent.

The next Conference of the Region I Division will be held in 1959, at a place to be decided. The Deutscher Amateur Radio Club is considering the honor.

Those present were: SM2ZD, G2MI, G6CL, PA0DD, G2IG, and HB8GA, Executive Committee members 1953-56; DL1WA, DL1KV, DL3FM and DL1BJ, of D.A.R.C.; G6OT and G2WS, of I.G.A.R.; ZL1RQ, of I.G.A.R.; G6OT, of I.G.A.R.; G2ZNU, of U.B.A.; G2ZNU, of E.D.R.; EA2CA and EA2CQ, of U.R.E.; OH2TK, of S.R.A.L.; PD9W and PD9R, of R.F.P. PA0NP, of Y.F.R. O.N.; I1FO, I1HDV, I1BEY, I1ABR, and I1BE, of I.A.R.U.; CN8MM, of A.A.E.M.; SM5NN and SM5SA, of S.S.A.; HB8F, HB8F, HB8F, and HB8F, of S.S.A.; YU1AA, YU1AA, and YU1CF, of S.R.J.; the Secretary I.A.R.U. and WILVQ, of A.R.R.L.; and HB8SI, of United Nations.

SILENT KEY

It is with deep regret that we record the passing of:—

VK3EO—Ron Russell. July 29.

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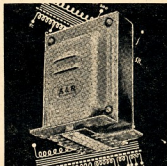
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FEDERAL QSL BUREAU

RAY JONES, VK3RJ, MANAGER

Since the amendment of the Australian Capital Territory from VK2 to VK1, the Canberra Amateur Radio Club has a QSL Bureau with Bud Pounsett, VK3AQJ, as Manager. The address of the Bureau, which will handle all V.I.T. VK1 cards, will be Box 59, Kingston, A.C.T.

Divisional Managers and others please note an additional change in A.R.T.L. QSL Bureau. The address will put it station, CRYSTAL, Box 746, G.P.O., Brooklyn, I., N.Y. The QSL Manager is Frank Huberman, W2YH.

The L.R.E.M. and the Radio Emissaires de Mocambique announce that on the occasion of the visit of His Excellency the President of the Portuguese Republic to Mozambique, the L.R.E.M. and the Radio Emissaires de Mocambique will be working on the air during the Economic and Cultural Mozambique Activities Show. The station will work on all Amateur bands on phone or c.w. as propagation conditions permit. The Show will run from 7th August to the 31st October and they will be glad to contact Amateurs anywhere in the world. All contacts will be considered by a special card commemorating the event. The address of the L.R.E.M. is Caixa Postal 812, Lourenço Marques, Mozambique.

Details of a new award issued by the Finnish Amateur Radio League have come to hand. The award will be known as the OHI award. The conditions are as follows: Contacts must have been made on HF bands, 1.5 to 30 MHz, on any band in the footnote hereunder. C.w. or phone, or both, are permitted. The minimum reports accepted are two. RS and CQ are not counted. Non-European applicants must produce evidence of contacts with at least 15 different OH stations including at least five call areas. Contacts may be on any band but 3.5 Mc. contacts will count as two contacts. Applications should be sent with the confirmations and five International Reply Coupons to the OHI Manager, Postbox 306, Helsinki, Finland. The footnote provides that stations OHND through to OHZHU are not eligible. OHI stations are contacted before 1st June, 1956.

Brisbane, Adelaide, Sydney and Melbourne Amateurs are meeting in a most friendly manner in Henry (Pat) Miller, WZAB, K6ARA, and ZC8PM, whilst his ship "Pioneer Cove" was in the above-mentioned ports. Pat, who is an active and energetic chap, has been most of his stay in each port. Whilst in Melbourne Pat was desirous of making a recording of the C.S.I.R.O. radio show, a shortwave broadcast, of some of the notable young Australian Amateurs, particularly Max Hoffer, VK3BP. Bert VK3GP generously offered the use of his studio to a microphone. The broadcast was hastily arranged at the home of your scribe and the recording duly made. Eric VK1BE suggested that the recording be made at a gathering to view scores of excellent kodachromes of Mawson and the surrounding Antarctica. Amateurs present were VK3 JSP, VK3 GWS, VK3 GWS, VK3 JRG, IEM, WZAB, and yours truly.

NEW SOUTH WALES

The New South Wales Division's July meeting was held at Science House on Friday, 27th. The lecture was delivered by our old friend Yardley W2AIIH, better known as Professor Yardley Beer, of the C.S.I.R.O. Yardley's talk on the latest developments in radio astronomy was delivered in his usual capable style and was much enjoyed by all present. Again the attendance was rather disappointing as only 60 members were present. Perhaps the weather will once again see the bumper attendances we should have in this, our largest Division.

As this goes to press the building at Dural for VK2WJ is really getting under way, with foundations being cut and bricks arriving at the site. There will be plenty of openings for all who are interested in getting on with this job of providing the Division with its first "head office" for VK2WJ.

Many stations have been heard making last minute preparations for the very popular Remembrance Day service on Monday morning. The "big guns" will be in there hoping to do better this time. Hope you did well, OM, and that you weren't too tired on Monday morning!

Again not much news from the workings of the city gang this month. Still having a bit of a trouble with that "spy ring." Barry 2AAB, Jack 2ATW and John 2PG have been recently heard with signals from mobile. Mr. George DON 2ASW off on business trip to G land via the land of the kilowatts both ways, nice business. Some of the boys conducting tests with some eye-monitors. Monthly expanded results! Regular transmissions are to com-

mence in Sydney very soon and much discussion and quiet re-building is going on. The Divisional BCI/TVI Committee is doing a very good job and would appreciate helpers. Thanks to the boys for the month chaps. Hope to have more news of the city divisions by next issue.

HUNTER BRANCH

A fair gathering of members and associates were present at the July meeting to attend to Branch matters, see technical films of topical interest and to hear a lecture by Doug Rogers, 2ADS, on "Converting the SCR522." Doug's lecture caused much interest as he gave data on the conversion using circuit diagrams and explained the reasons for some of the conversion methods.

The Hunter Branch Convention will be held on 29th and 30th September at 43-45, Scarra, near Newcastle. The activities will commence on the Saturday afternoon and close on the Sunday night. Programmes of the events, prizes, and other necessary information are being printed immediately and will be distributed to all interested members.

The programme is as follows: Saturday, 29th Sept.: 3.30-5 p.m. lectures and demonstration of equipment by the V.H.f. Group; 5.30-7.30 p.m. tea; 7.30-10.30 p.m. series of short lectures on subjects of local interest.

Sunday, 30th Sept.: 9-11 a.m. 144 Mc. Hidden Tx Hunt with a prize of 10/10/-, second prize still to be received; 11-11.30 a.m. Registration and listen to 2WJ followed by 11.30 departure for locations for Hunter Branch Scramble (all gear, including antennae, must be at the departure point by 11.30 a.m.). Scramble commences (any band, any power, but must not use power from a.c. mains); 12.30 p.m. Scramble ceases, return to park; 1-4 p.m. lunch; 2-3.30 p.m. children's sports, games, races, etc.; 3.30-5 p.m. blindfold Tx Hunt, first prize 4/5/-, order.

The nearest main line station to Blackalls Park is Passfield. Trains will be met, if the Social Committee is notified. Accommodation for the OMs is free, for information fee for family groups through the Social Committee. All bookings for accommodation to be made before 15th Sept. Who are the Social Committee? They are WZAB, 2XIA, 2XT, 2ADS, 2AGD, 2AOR, 2CS, 2ARV, Associate, Bob Bailey, Roy James and Gordon Sutherland.

The activities among the Hunter Branch this month have been most successful. Jim 2AB has been pouring cement for his new 2WJ tower. He is at present using a two-wire beam to work local Mc. phone DX. George 2AGD mostly QSOs local on Monday nights, also likes to work. He prefers the perils of Sydney driving to the QRM on the Amateur bands. Varley 2SF is still in the throes of a.c. building, but finds time for 7 and 14 Mc. phone. Leo 2QB is rapidly developing into a midnight DX hound after fulfilling more pressing social engagements; he has since phone now on 20 Mc. Bill 2XT pops up on 40 Mc and lets VK2s know of the coming Branch's "Do", just like a good President should.

Lionel 2CS can be heard with the other greybeards on 80 Mc each Sunday night. John 2QG also frequents the "old man's band" on phone and c.w. and has worked some daylight DX on 20 Mc while on his holidays.

N.S.W. DIVISION

SOUTH WESTERN ZONE

Fourth Amateur Radio Convention

★

Location—

GRIFFITH

SATURDAY, 29th SEPT., '56

SUNDAY, 30th SEPT., '56

★

at I.O.O.F. HALL, Banna Ave.

★

Registration £1 each Adult.

Harold 2AHA has been working on local mobile marline. Bill 2ZL has been feeling the best active only during day, but is keen to work some 20 mX DX. 2AQR has started on his third 100 Mc. mobile from West Maitland soon. Dave 2BJZ joins an ex-Hunter man, Jack 2ADT, and 2ZX from Inverell, and V.H.f. man Major 2RU of Gosford, journeyed to RG's Party. N.S.W. I. QSL for his because "buck's" party. Harry 2AFA has been quite of late, he has been working a little DX on 100 Mc. 2XNY 2DX busy selling TX's. Associate Jack 2XNY has been in the week off as 2ASJ second op. being a victim of the flu. Ron 2ASJ and Syd Daniels expect to do RG's Party when these notes are published. We all wish them a good trip.

The next meeting of the Hunter Branch will be held on 14th September at 8 p.m. at the Inverell Technical High School.

Don't forget our Hunter Branch Convention, 29th and 30th September. Also listen to 2AWK, the official Hunter Branch station on 1440 Kc every Monday night at 8 p.m.

UPPER HUNTER GROUP

It's months since we have had really fine weather in the Hunter. The drought is so drought! No rain for two whole weeks, Bill 2X 2GV still working on 40 Mc during the drought and busy with 2 mX gear. Geoff 2VU putting up a new antenna and working with his 2ATRB as main tx still dismantled. No news from Roy 2RC since he went bush; do you see a fine reason for his absence? Nev. 2OS busy around the home, laying out a garden, I believe.

2AEC and 2ZC mobile was worked by 2ANU, Jack 2ZC and 2ZC were on a gathering at Gosford. Geoff was also honoured with a visit en route and a cuppa cadged. Local interest in Amateur Radio in this area appears to be on the increase as your scribe has had several enquiries from interested parties and has endeavoured to put them on the right track. Well chaps, if you are interested in the matter, hear from you sometime as your news will help to make these notes more interesting.

NORTH COAST AND TABLELANDS

2ADT and 2ZX (how did they get in again?) were reported to be giving each other driving lessons, and 2ZC was on the traffic on the recent trip! 2AEV also has been in the area. We hear. Believe the Grafton boys have been getting some good entertainment listening to 2ZC and 2ZC on 40 Mc. 2ZC is also working 2AIIH tuning up for R.D. Test (big score expected from you, Noel—Stan.).

SOUTH WESTERN ZONE

Lin 2AQE at Wagga is once again active after quite a long spell of inactivity. Lyn called on your scribe last week so I have the inside story. He is now working on 144 Mc. and is information. He is contemplating a new mod. from cathode to plate and screen. Alf 2BW also at Wagga has been doing a mighty job at the centre during a flood emergency at Wagga. Congrats Alf on a job well done. Stan 2AID also active occasionally from Wagga; Stan has been rebuilding the rig Jim Pratt at Ilabro. Stan is about ready to go on 144 Mc. but was "butter-fingered" with his 8 Mc. crack so he has to wait for a new one to come along before he can fire up on 144 Mc.

The three Tumut chaps are all active on 2 mX at the moment. Keith 2ZAA has increased power and Geoff 2BQ has also a new p.a. Ross 2BQ is still working on the secret list. Don 2RS at Albury still active and now has a lounge-riq built. "Wot? Too cold in the shack Don, or is Glenda getting cold?" Hope you are all well. See you on 29th and 30th September at Griffith. Book early.—2AJO.

TAMWORTH

We start this month's notes with a suggestion that chaps of a Sunday morning may find it more convenient to use 80 Mc for local working as this band is in excellent shape in the mornings. Stan 2LY has his rig ready to fire up and should be heard holding forth by the time these notes are published. Nothing has been heard of Syd 2AFS, but we note he has now acquired quite an antenna farm in his backyard. Noel 2ASJ has been too busy sitting for exams to get his job done much lately. He has got very far with his cubical quad; after he gets the quad up it will have the ears pounded off it by a 5 ft. high antenna starting to get very badly bitten with the bug.

Bruce 2ZAD, after going to a lot of trouble to put up a 4 el. beam on 2 mX, forgot to anchor the beam to the ground. In his own mind, Bruce will bring you down a bonus's chair! It is a fact that 2ABT did arrive home safely after being down Eden way; he did not get up in the air. Nothing was the way, nor did he get too ensnared with the

Fishermen's Club of Eden. Rod ZACU heard putting in a nice rig from his p output in the AT11. Frank ZAPP re-built 2 mx beam with increased output (the hopes) and apart from working Ken ZANU, also has a new rig to raise one more. Also set up from 5 a.m. one Saturday morning, with Ken ZANU, listening for ZADTZX mobile. It appears they missed a lot of words of the plane but they can't be heard. You'll have to connect the antenna next time Jack.

COALFIELDS AND LAKES

Due to writer's inactivity in past month practically no news is available for this issue. Conditions generally have been patchy. ZKX at last has had a good run on the 72 and tower, and I believe results quite good. ZKX on now and then, also doing some building. ZKX has not had 2VU in 144 mfc. so far. He is the band still "lost." Nothing from Gosford or Lakes boys this month. ZRU is generally on some band and could give a dope re boys there if contacted. ZYL very quiet this month, a couple of 21 and 144 Mc. contacts being the issue.

CANBERRA RADIO CLUB

Recent lectures, "Crystallography" by Mr. W. Roberts, of National University, on 12th July, and "History of Broadcasting," by Mr. C. B. Macquarie, of the same institution, on 20th July were well attended by members and proved to be extremely interesting. Further lectures will include a series of Television by Mr. B. Asman, of the Patents Office.

John IZBS, one of the Club's most active members, is leaving for a short time to take over the Canberra-Macquarie Island! A determined effort for an unlimited ticket is to be made before departure from Australia. Les IZBS v.h.f. munnery and would like to hear from anyone interested in v.h.f. contacts with Canberra, particularly on 144 Mc. There is a possibility that a new band director is about to appear on this band with full power and a 18 el. beam. Les IZBS says that "DX quality" phone runs works. Les is studying his ham radio, and is a former and substituted a power transformer. Underneath by unfattering local reports he says DX reports are bigger and better. Bud ZAQ is still knocking them over with his ground plane on 20 mc. Ted IAOP has almost finished a new all-band tx.

Ken IAIL, our worthy President, has plenty of trouble on his mind. It seems that his WJXK fixed beam only recognises such calls as LA, OH2, OZ4, EA8, SM5, etc., as DX. Harry ZBW at the SW at 144 Mc. has a new rig. Duntroon (IRM) seem to have found the elusive frog in the tx and have been heard with good phone. Rumour has it that they are buying a 200 mc. Bob ITV is grappling with a new three-band rotary. Preparations are well in hand for operation of the Club Station, IACA from the Albert Hall in the Annual Hobbies Exhibition. The special QSL card is a beauty as those fortunate enough to work IACA will be pleased by now. Visitors are always welcome at meetings and entertainments at the clubhouse every Friday night. Two tall white masts on a hill at Riverside will guide you, so come along.

VICTORIA

Hans Albrecht, VK3AHH, gave a very interesting lecture at the general meeting to a large crowd of about 90 to 100 Amateurs. The lecture was entitled "Radio Control of Research Missiles." Hans is a research physicist, and a man which Hans himself had prepared. He discussed the atmosphere around the earth and the types of man-made missiles which are used to research the upper levels of the atmosphere. He also described the various ways of radio controlling rockets and guided missiles and the types of research that can be done to earth stations. He concluded with a short resume of the satellite which is proposed to launch into the upper atmosphere for the purpose of research in 1957-58. All were greatly intrigued with this lecture on such a little known subject and many questions were put Hans Albrecht, VK3AHH.

The following new members were welcomed to the Institute: Messrs. D. Jenkin and E. Daniel (as Associates), and Messrs. I. Wardie and E. Singh (as Associates).

Owing to the fact that the Radio School is not available in September, there will be no general meeting held in that month, instead the next general meeting will be held on 29th August when Mr. Alan Foxcroft, VK3AE, will give a lecture entitled "Sunspots and DX." This lecture will be illustrated with films.

For the October meeting it is hoped to arrange a "Frogman Lecture" to be illustrated with films, by Commander Batterham, R.A.N. It is with deep regret that we record the passing of Ron Russell, VK3KJ, who was a senior constable and radio technician at D4. Ron died suddenly on Sunday, 29th July, and the sympathy of the Victorian Division extended to his widow and young family. Ron was only 43 years of age.

The Victorian Division has received a donation of a Valve Checker which tests all types of valves including vacuum tube valves, etc. It has been placed in the lending section of the instrument library and may be borrowed by instalment members of the Victorian Division. It is your opportunity to go through all your old disposals valves in the junk box in the convenience of your own home rather than having to carry them into the Institute for checking.

The Annual State Convention will be held at Leongatha on the week-end of 3rd and 4th November. Ron Jardine, VK3PR, 4 Blackmore Avenue, Leongatha, will be handling arrangements for accommodation, etc., from the Leongatha end. Items to be included on the agenda paper should be forwarded to the Victorian Division without delay.

Another course of the A.O.C.P. Classes has got away to a good start with a satisfactory attendance. Ron Russell, VK3KJ, who was a senior constable and radio technician at D4, is again running the c.w. and reg. class and the new instructor for the theory class, Bill Z3FP, is also running the theory class. His lecture should make a great success of the job.

Another disposals handout has been conducted by the Victorian Division, having been forwarded to all financial members and as the disposals committee has been able to gather together considerable stock of equipment for disposal to members, most look like being lucky with their applications.

The Victorian Division extends best wishes and congratulations to former Secretary and Councillor, Col 3FO and his ZYL, Pat Gibson, on the arrival of their first harmonic. The baby, a little girl, to be named Cheryl, arrived on 19th August. The progress report is all well including the father.

And now a word to those interfering so-and-so's who keep cluttering up the slow move practical sessions for emergency 350 Kc. Every Sunday evening. How on earth do you think I'll ever get my c.w. if you keep on mucking me up with mel. I have been told that the Short Wave Listeners get terribly disappointed every time the transmission suffers from QRM. And think of the operator, all his preparation and time spent for nothing. What about giving us all a break, it's not much to ask, it's only for half an hour on one night in the week. Please remember to keep the 350 Kc. clear between 8.30 and 9 p.m. on Sunday evenings. Thanking you in anticipation.

50 METRE TRANSMITTER HUNT

It was one of those really perfect sunny days and a very excellent crowd of 51 turned up to the 50 metre Tx Hunt. The tx, which was hidden by Eric ZADU, was located at Bulla. It was hidden amongst rocks and bushes beside the river and could be approached only by means of crossing the river via a very wobbly suspension bridge. The river was very noisy and the suspension bridge was the harmonics. Eric, as usual, got up to tricks and this time employed an electric fan to help him. The tx, which was very delightful from a scenic point of view with a deep ravine with the river at the bottom complete with a water gate, was a pleasant surprise (though wobbly) suspension bridge. When all competitors had arrived they gathered together and had a picnic. The tx was sheltered by a tree covered cutting by the side of the river. All declared it was a most delightful way to spend a Sunday afternoon. The winner was Laurie Z3VY, who was 320 Kc. away from the reg. Z3AD. The next Hunt will be held on Sunday, 18th September, when Tom ZAOG will be the host, and about coming along and joining in with us?

NORTH EASTERN ZONE

The annual meeting was held in the R.S.L. Hall at Seymour on 4th July. Des 3CO had a much appreciated ring going where those who braved the elements managed to thaw out before the meeting got underway. After a late start, the proceedings were rushed through so that the gang could hear about disposals and the 350 Kc. clear between 8.30 and 9 p.m. on that score. New office-bearers are: President, Bruce Z3AG; Vice-President, Des 3CO; Secretary, Andy 3VD; Zone Correspondent, Les 3ZAY; Treasurer, Les 3ZAY; and the 350 Kc. Des 3CO and Jim Harrington; Communication, Frank 3ZU and Ken 3KR, and Zone Co-ordinator, Henry 3HP.

Those present were ZACH, ZJC, ZAXW, ZAPP, 3CO, 3FD, 3ALE, Jim Harrington and brother. Apologies were received from almost all other Zone members. Visitors were Gordon 3TE, State Correspondent, of the Vic. Div.; Fred 3YF, Hon. Sec. of the Vic. Div.; and Cliff 3ATP. Fred managed to interest most members in a new book called "The Wobbly Log Book."

Des had teed up a visit to the Woollen Mills where the works were inspected with much interest after which yours truly had to leave but other visits were on the agenda. ZYLS State Correspondent of the Vic. Div. was around the fire and are to be commended for braving the weather with their OMs.

The zone hook-up is still to be at 1330 hours on the 144 Mc. band. The frequency is not in use during emergency work. Listen around chaps, we will be around near this frequency. The average number of zone members on the hook-up is four; for a zone of this size that is very poor, so chaps it's up to you.

SOUTH WESTERN ZONE

The zone has not been quite as busy this month owing to the bad weather conditions. There have been a few contacts, however, on 14 Mc. just the same, also Harry 3XI and John 3ARJ, who I believe has had a lot of work to do owing to his father getting married. We were well served by our OMs. Norm 3EQ is still flat out on the remote control business. Harry 3HF seems to be getting back into the zone. The average number of zone members on the hook-up, doesn't seem to be very pleased with the a.c., never mind Wal, these preferences have been hanging round the church amplifier, so Bill will have to be excused. We all hope Bill 3WT is feeling much better now and is able to have his back 3JA has air on the 3PS is still looking for a Type 3 or ATR2B so as to get on again. 3PO made a short appearance one morning on the hook-up. Jim 3ABT has been making himself known on a couple of hours. Bert 3VA seems to bash 3ACE's ear a lot.

We have the Kinnear Trophy in the zone so what about all helping to keep it? I suppose you can't have a trophy without a few cries along in the wilderness. We all hope to see a good muster at the Convention as the Ballarat boys always put on a good week-end. Bill Wain is now the owner of the 350 Kc. beam so when this is put on the tower, whacko for 20 mc; also has 5/5 to mount on the tower. The 350 Kc. beam is still on the bands a lot. Ian 3BV is busy cleaning up the hum in the tx.

EASTERN ZONE

Graham 3QZ and ZYL have gone on a caravan trip to Central Australia. He took the Type 3 with him and his c.w. sigs were heard on the zone hook-up at 569 from Alice Springs. Graham 3ZIF, who is still in the Vic. Div. and is in residence, so we are looking forward to hearing his signal on 80 mc again when he gets back from his holiday. Graham 3ZIF is under control for the State Convention which promises to be a great event for the zone. Ron has a new rx now, an AM300, which he says is very good. The 350 Kc. beam is still on the final of the big rig, going in for an 813. Cliff 3AT is putting out a beaut. signal and has a new 350 Kc. beam. The 350 Kc. beam is still on the final of the big rig. Gilbert 3AYM is back on the air again, after a re-build, with a good sig. Ewen 3AEC is on each Sunday night; has a capable second zone Don Duntroon.

Len 3LV has been on sick list for some time now, but is slowly recovering. Jack 3AJK has the new rig going at last, running 25w. input to 300 Kc. The 350 Kc. beam is still on the boys on 2 mx with the 522 and I hear he is going on a trip to the outback up north. Peter 3ZAY is still on the 350 Kc. beam. We will him all the best down there. Bernie O'Reilly is now an Associate member of the W.I.A. Congrats to you Bernie. Don't forget s.w.i't. in the zone to Ewen in the Vic. Div. in the magazine and keep the Eastern Zone on the map. All intending to go to the State Convention should contact Les 3ZAY, 3PR, Blackmore Avenue, Leongatha.

GEELONG AMATEUR RADIO CLUB

At a recent meeting, Mr. A. Forster, ZAJF, gave a most interesting lecture. The speaker showed how to work out requirements by mathematics and put them to practice. The boys recently helped Bill 3AWZ erect his new 350 Kc. beam. The 350 Kc. beam is still on the boys have been contacted at good strength, e.g. 3ZAY, 3CP, 3AE, 3ALZ. Television aerials now appear skywards and we wait anxiously—

Interference possibilities by both t.v. x's and maybe Amateur t.v.
 On 2nd Sept. our first field day on 80 mx will take place. Bring along the family and have a good time. The usual Sunday outings have taken place and the boys have had some interesting contacts.

QUEENSLAND

BRISBANE AND DISTRICT

Well, gentlemen, it's arrived! By the time you read this quite a few of our fellow Amateurs in Sydney will have received their "Baptism of Fire" in combat with t.v. Fortunately, the VK4 Division has formed a T.V.I. Committee by which we're sure will meet the challenge and be victorious. They have been preparing for t.v. for quite some time and won't be appalled by surprise. This is all leading up to an appeal to members of this Division to "get cracking."

Adolph Hitler conquered most of Europe between 1939 and 1941 and he used psychological warfare on his intended victims to soften them up. How well this worked we discovered too late, but we can prepare to defeat our future enemy by just the same tactics. In the company of friends, at Club meetings, when you are having a couple with the boys, a little talk will fall on the ears of intended t.v. viewers and, possibly, will soften them up and prepare them for the interference they certainly will get. Emphasise the point when the t.v. pictures are "fouled-up" the cause could be a car with unsuppressed spark plug leads, a noisy fridge motor, an electric lawn mower or any unsuppressed electrical equipment. Tell them that

faulty or unsuppressed electrical apparatus can cause havoc with t.v. so that when they have t.v., the local Amateur won't be blamed. Make certain you do mention that a couple of manufacturers have insisted on using 21 Mc. for their sound i.f. and 26 Mc. for their video i.f. against the advice of the Broadcasting Control Board, and that the choice of 21 Mc. clashes with a frequency which the Amateurs were allocated by International agreement. Quote the statement of the Postmaster-General, Mr. Davidson, on this point and use everything within the laws of libel to make John Citizen realise the mistake he would make in buying a receiver made to specifications contrary to the advice of the Board. It's up to you now, so go something.

Now that we have that off our chests, leaving only the remnants of a nice bout of U.R.T.I. (Upper Respiratory Tract Infection), which has been on a rampage in Brisbane, we would like to let all members of the VK4 Division know that we have secured a batch of 30 crystal inserts at quite a reasonable price and "QTC" will give you details of how you can obtain one. They are completely moisture-proofed and the frequency response is excellent. We have also tendered for some really nice disposals gear and if our tender is accepted we will let you know in "QTC." One point, if you see a note in "QTC" that we have some gear to be disposed of, don't wait till the last moment to get your name in because the gear will almost certainly go to ballot and if you don't want to miss out, be quick smart about getting your name in. Please don't send a cheque until after the ballot is drawn.

The "a.c. band" boys have been having great fun with their 2 mx d.f. hunts. John APT won the first hunt on his motor cycle outfit and took only 22 minutes to discover the hiding

place. The second hunt was tinged with humor. The hunt arrived, one by one, at a spot near Mt. Cootes to find it was the meeting place of some "gentlemen" who prefer to drink methylated spirits and other beverages with a similar punch. A fox was parked in this convivial spot and two characters were stretched out in what appeared to be a "Bathonian stupor." With the activity of the "hunters" they roused, mouthed words and threats, but did this discourage our d.f. men? No, and luckily they persevered to find that the fox was a Redback, very very subtle plants. The first to realise this was Jack 4JO who, with the assistance of Lou Hill, won the hunt.

Well, please give our "renting" on t.v. society a hand and do not expect cooperation we can lick it. Don't forget the general meeting on the fourth Friday and make an effort to attend.

MARYBOROUGH

4A1 is building a new tx—what, again? Each of Alan's successive rigs gets smaller, so we will bet on transistors for the next one. Alan comes on 14 Mc. for an occasional contact. 4CB should have his steel tower up in a month or so. Arch still works Brisbane on 2 mx, and is also working on his new h.f. tx. 4BC is still a real busy bee and is working mainly on 20 mx, phone and c.w.

4A1 hopes to get rid of some public offices and make a nice little home. He has a small Flins a quad for 21 Mc. Arch 4CB nearly finished his 50 ft. tower. Had to get in a mobile crane to turn it over so he could rust-proof it underneath. He has a new 20 mx antenna and is picking up an odd new one. At present rebuilding power supplies to increase the input. Has 6146 in pi-network final working well.

TOWNSVILLE

The meeting held on 12th July was poorly attended and did not seem whether it is due to the cold weather or that the locals cannot just be bothered, unless we have a film to hold their interest. Anyway, the few stalwarts do attend and attend. The Secretary about everything in general. The Secretary is in hospital while the notes are being penned and just getting an operation which seems not successful and after regaining his health will have to submit to the knife again. Ed, all the boys wish you the best and hope a better luck next time. You will be missed from the D.C. Contest this year and hope you are able to win a trophy again next year.

Alan 4BK in Brisbane doing a refresher course at school and is able to see the able to see Wally 4RU now the proud father of another girl. Congrats to Eileen and yourself. Hope you will come true someday. The 4BX has put up the G4ZU beam and really delighted with same; hopes to do a little pruning to get it to his own satisfaction. Graham 4BX coming on a few times to work the W boys. 4GF bunched up during the week on 7 Mc. on the lunch time net. Vern 4LK and Colin 4CE trying to find out where their 144 Mc. signals are going; try looking down some of those old mine shafts around Charters Towers. John 4DK hopes to get a.s.b. going before long and has nightly discussions on 2.5 Mc. with Vern on various problems.

The boys from far north are not breaking through to well, must be the weather.

SOUTH AUSTRALIA

First of all I must acknowledge the many "good wishes" expressed to me, by both those at the last general meeting and by letter, some of which have been bolstered by a few letter-less acceptable. To those who promised to send me items of interest from time to time many thanks, and I hope to hear from you.

The monthly meeting of the Division, held at the usual place, was very well attended, with all executives present under President John and including the following visitors: Messrs. C. Appleby, H. Hapstock, I. Johnson, G. D. Hockley, and Keith Smith a visiting mobile marine type ZS2FW and GW3JZS of the "King David." Your secretary was absent a few days prior to the meeting from Keith ZS2FW and was happy to meet him, he was accompanied by Keith and Col. SJO and as most of our talk and action was over, we will leave it to SMT to tell you about it. Oh, yes, the meeting. The formal business got the usual attention and those present were active in the Council's activities, of the S.W.I. Group's doings, some Grey Beard Certificates were presented and it is surprising to hear they were grey too. Contest Certificate given to Awardees and Joe SJO received his W.A.C. Loud clapping and some cheers of approval greeted each award. Smoke and QSL cards distributed followed, and what cards there were too. One chap got a handful of European ones—GW, PO, EI, and

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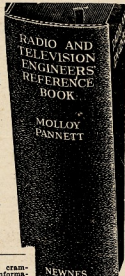
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so on. My XYL thought then to be a satisfactory addition to the already untidy heap, what am I saying. Les 5AX was not present to see the above glory for he had his nose out of joint—no, not because of the said GW, PO, and EL, but because he was out of town. The organ by a spanner that a machine hurled at him. Bad Luck Les, hope the snorkel will soon be central and functioning normally.

Ten days of equipment and equipment, the evening, led by those cheerful and hard-working fellows, Douglas and Norm. There was not a great deal of gear offering, but it was good to see. By the time you read this the VK-ZL Certificate holders are out and about—congrats to those lucky ones, the Committee spent many a long hour checking and suggesting the delay in issue, but consider accuracy essential.

Our T.V.I. Committee still keeping us advised of activities and movements, etc., generally keeping right up-to-date. It is not only the problems face us we will have a "knowledge pool" to draw on. They are asking us to advise prospective tv. purchasers to watch they don't buy or commit themselves for equipment that deviates from the laid down Aust. standards of L.F. frequencies, etc., particularly the view of the announcement by P.M.G. that they could not be expected to protect non-standard receivers from T.V.I. It will be a pity if a few of our members will be blamed for plenty without having a set near us with an i.f. on a possible Amateur band or harmonic thereof.

Keep clear of 7146 Kc. on Sunday mornings from 0930 to 1130 C.S.T. at least to avoid clashing with other Division's sessions. Gordon was giving this out last week and the trouble came on the same frequency and really did some damage. It was probably accidental—but then we can sometimes avoid such accidents by knowing beforehand.

Why does our Public Relations Officer, Norm, always arrive at morning tea time? He never looks to me as though he uses such things, but the music must be "excellent" as Eric PO doing a fine job on the Morse Classes—the Council made an appreciation—very nice Bruce, your help is very welcome to the newcomers. By the other Sunday p.m. when turning home saw a dirty big 50R either on my beautifully rolled, leveled, graded driveway. Always play. Always play. Always play. One all the same. Austin 5WO was steamed up for the R.D. in spite of a possible "away" job on that day, good luck fellow, hope more the following week. Gordon was heard to have had a busy time checking logs again (will have to get Les to knock up an electronic brain for the next time). The papers are all in the papers surely. Wal SDF has his 888s well oiled up lately, very steady good signal and his presentation contact with John SD, usually gives an indication of possible conditions at the end of the morning. You would not believe it, but John EKK actually asked Wal for the correct time on Sunday. Jim SD was heard to have always thought he was the bloke who saw to it that his show kept "our" clocks right, bad show John.

NORTH WESTERNE

Congrats to Dave Barker on passing his "Limited" which should help raise interest in 2 mx work. The NW interest in 2 mx work has been hurt up there Dave, give the place some character. Bernie SQW has finished a small rig, much to his surprise, and it works. How does it work? He has the only one there with low power rigs ready for portable use, the birds tell me Ron RPY has one that he tried out on the 20 and 10 mhz. The fact that P. & S. modulation would complete it, he puts in a good signal here at Gawler. The reason why the 20 mhz. modulation is in this rig is that he cannot find room for even a sub-miniature transformer, in fact the room in the case is so limited that there is no room to screw the speaker in the panel, no room for the screws that is, he relies on the magnet of the speaker itself to hold it in place!

Some time ago a writer in "QST" told us how much the SWC boys were using the 20 mhz. not to be out-done the SWC boys have started on just that, but in their case, being of a different pattern, for they are using baked bean cans. As they have a quarter wave on 10 and hope by vigorous consuming of more and more beans to finish up with quarter wave on 40. Life begins at 40, remember.

Haven't heard Keith 5ZAS' voice lately and understand he hasn't been slamming the club door much of late. Home-building or swatting 20 mhz. (see Mike 5ZAG's column) is a greener pasture and will no doubt pop up under his own call sign soon; that will make the others envious. The 20 mhz. has popped out of hibernation occasionally, being torn from the rat race on 40 and the quietness of v.h.f. They tell me it is that quiet on 2 up there that you could hear a beam drop! SD,

the QSL Manager, makes the best brew known (what of Ron?) and is swatting hard, give it a go Sid and be in the swim.

SOUTH EAST

Sorry your notes were late last month, so missed the issue, but on the theory better late than never, we include now. The second anniversary of their monthly meetings was celebrated last month. The program was presented by Col 5CJ, with Tom 5TW providing the wind to extinguish same. A good old natter preceded the disposal of John 5F's gear, or at least some of it. John 5F was taking a break from motor cycle racing. Keep the front wheel on the band John. A demonstration by associate member, Les 5ZAG, of the program, a tape recorder impressed all with its efficiency.

Stuart 5MS heard on the air much these days, understands he is having trouble with his beam. If you want a hand at building a shack see Col 5CJ, for his infrequent appearances on the air are due to building activities, a smart job, too, from all accounts. Heard that Les 5ZAG acquired SDF's power supply, right, now match it Les with r.f. gear, and let's hear you. Claude 5CH is a step further to his new rig with John's modulation in his position. —looks like Col 5CJ may get some QRM when this new "gallon" gets going. Erg 5KU has reduced possible wind damage by re-building to a 2 element job, hope it's "up and doing" by now. 20 is fairly active these times, so don't miss out.

WESTERN AUSTRALIA

At the July meeting of the Division, 6RU deputising for 6MX, who has gone on a brief visit to G land, gave an excellent description of the Collins 75A4 rx. It was evident to members that the emphasis on the design had been placed on selectivity and the means employed to obtain it. Not only is the bandwidth cut to narrow limits, but the response is very flat, and the gain, differing by as little as 1 Kc. can be completely wiped out. The frequency stability equals that of the well known DC21, and the band pass is very sharp. The demonstration again convinced members as to the claims made for the receiver.

George 6GM has been made a Life Member of the VK6 Division, an honour which has been earned. Over 28 years' service during which time he has served in practically every capacity. George is the second Life Member in the Division, the other being Tom 6AG, who this year celebrates 50 years in Radio.

Others of the old gang are Jack 6AV, active once again from a new QTH (with power line) and, Clarrie 6CF, who has been heard quite often lately. Quite like old times to hear the well known voices again.

Two rare visitors to the last Divisional meeting were Jim 6LM and Graham 6TH, who came back again as soon as a new workshop allows him to return the shack to normal operation, and 6PL, a very active member particularly on 20 and 10 mhz. Carrying on the tradition is Tom 6TH who, after only being on the air for less than six months with his A.O.C.P., has already explored 80, 60, 40, 30, 20, 15, 10, 5, and 3 mhz. barking on 10 and intends doing a full-time job in the R.D. Contest. Congrats. Tom!

The Constitutional amendment is now law, and like all other amendments, it has been passed by members, with stated voting restrictions.

To collect information on commercial QRM in Amateur bands, a monitoring group has been formed. The group will be made up of all grade members, with stated voting restrictions. To log any QRM heard on exclusive Amateur bands and send to one of the group, giving date, time, frequency and any other particulars known.

The 40 mx Scramble is fixed for Sunday, 23rd September. Rules same as last year, providing for contacts for one hour before lunch and one hour after. Conditions should be better this year. Don't miss this.

As Adelaide has received that an Amateur in Western Germany has been granted a tv. license on condition that only pictures or photographs may be televised. It seems that his log will consist of a photo album!—GEI.

TASMANIA

News this month as in previous months non-existing—no mail, telephone or telegraph services in this State taking a constant of correspondence. Conditions are such that have made it possible to cave-drip to any extent on the bands.

News this month has seen a good roll up at times on the Sunday morning hook-up and on other occasions the ether has been a complete void at this QTH. Yours truly and Reg TWRN recently visited the headquarters for a monthly

meeting to find an excellent roll up and spent an enjoyable night, even allowing for an auction sale where certain gentlemen did not allow for our country simplicity. Visited Leon TJP during tour in newly acquired vessel and found him all fired up preparing for Contest. All-band v.f.o., link coupled final, pi coupler, but where is the sky wire Leon. Jim 2ZAM visiting last month, but as yet no report on how much we hope some new call signs will emerge.

All chaps forwarding Handbooks, etc., are gratefully thanked for their interest and we hope their contribution will be of good use to the future.

The lack of notes in last two months are attributed to lack of time, or more correctly, members allied with unexpected leave and family sickness at this QTH. Contest time will again have passed when this appears in print, so we hope next month we can record a victory. Well, chaps, unlike the well known axiom, "No news is bad news," as far as this Division is concerned. A little link and a little time is most inexpensive.

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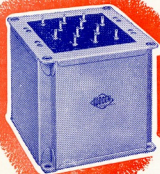
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